



# College AND UNIVERSITY Business

**JUNE 1950: Formula Plans and Endowments ★ Small Private College or Almshouse? ★ Interior Design of Library ★ Four Chapels ★ Satisfactory Lighting ★ Purchasing Agent and Department Heads ★ Cafeteria Cash Control!**

# What Lies Beyond?



**IDEAL CONDITIONS FOR LEARNING**—is that the environment toward which these young students are headed?

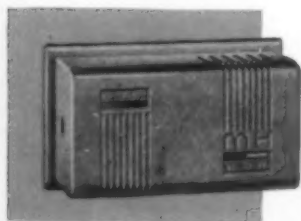
Probably so.

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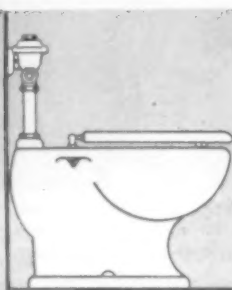
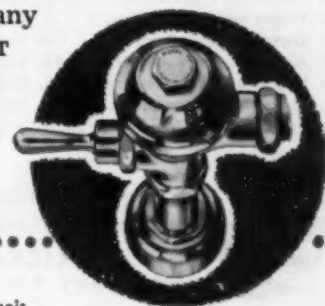
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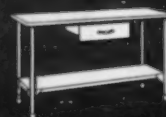
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# College AND UNIVERSITY Business



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**JUNE 1950**

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## Among the Authors



C. S. Cottle

C. SIDNEY COTTLE, economist and financial consultant, writes on formula plans knowingly. He is professor of business administration at Emory University School of Business, and he teaches corporation finance and investments; he also is a faculty member of the School of Banking of the South. His years in the investment business and his work as financial analyst in the reorganization division of the Securities and Exchange Commission were interrupted for navy service. Consecutively, finance officer and adviser in North Africa, Sicily, Pearl Harbor, and the Central Pacific, he was at the time of his release from active duty in 1946 assistant fiscal director of the navy. His co-author, W. TATE WHITMAN, is associate professor of economics at Emory University School of Business. Their article appears on page 24.



C. T. Clark

CHARLES T. CLARK, who writes on handling nonteaching personnel in the large university on page 28, is director of nonacademic personnel at the University of Texas, of which he is an alumnus. He started his career as assistant manager of the chamber of commerce at Austin, Tex., became assistant dean of student life in 1946, and took over the personnel job in 1948. An indication of his ready acceptance in the field is the fact that he is vice president of the College and University Personnel Association.

WILLIAM S. DIX, librarian of the beautiful new Fondren Library at Rice Institute, the design and furnishings of which he describes on page 37, went to Rice from Harvard University, where he was instructor in English from 1946 to 1948. As director of the Committee on Private Research at Western Reserve University in the early Forties, he wrote on the "Amateur Spirit in Scholarship." A graduate of the University of Virginia, Mr. Dix took his Ph.D. at the University of Chicago.

HARRY W. HORN, when he discusses the lighting of the electrical engineering building at the University of Illinois, on page 42, is quite within his own province as he is associate professor of electrical engineering at Illinois and a consultant on illuminating engineering. He is active in various projects of the Illuminating Engineering Society. The lighting of the building he describes so thoroughly, yet modestly, is standing up beautifully on the use test. . . . ORPHA MAE THOMAS, author of the citrus fruit juice article on page 49, is nationally known in the institutional food field as associate professor of home economics, Teachers College, Columbia University. . . . ALONZO F. MYERS, who contributes this month's guest editorial (p. 17), joined the faculty of the school of education at New York University in 1930 as professor of education. He became chairman of the department of higher education in 1940. A graduate of Tri-State College in Indiana, he received his master's degree and doctorate from Columbia. During his early academic career he was a public school administrator, a director of teacher training at Ohio University, and state director of the division of teacher preparation, Connecticut State Board of Education.

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# Questions and Answers

## College Bowling Alleys

**Question:** Has the Association of College Unions surveyed its membership recently to determine how many schools are planning to include bowling alleys in their new union buildings? What percentage of them include billiard rooms?—N.L., N.Y.

**ANSWER:** This type of survey is now in progress. It is being conducted by W. R. Rion, chairman of the Association of College Unions games committee, Florida Union, University of Florida, Gainesville. Results were to be reported at the association's convention and printed in the proceedings of the meeting.—PORTER BUTTS, *director, Wisconsin Union, University of Wisconsin.*

## Hiring Clerical Help

**Question:** Is there any correlation between educational training and clerical efficiency? How important is educational background as a factor in the hiring of new clerical help for a business office?—R.T., Mass.

**ANSWER:** After using preemployment tests for more than a year, the University of Florida decided to make a statistical study to find out what general conclusions might be obtained. Based upon test scores of about 1000 applicants and data supplied by the personnel office, this study was recently completed with interesting results.

Younger persons with no more than high school education usually should be placed in strictly clerical jobs. Those positions involving typing and language skills might better be filled by older persons with greater amounts of schooling or experience.

The more education the better the scores in all tests except typing. There is little or no correlation between education and typing ability. To put this another way, typing is a manual skill that may or may not have much relationship to abstract intelligence. Our original assumption was that persons with high clerical aptitude scores could master the typing requirements of any job if given the chance, but this has not proved to be the case either from

actual cases or from this statistical study. Typing speed and accuracy are closely related.

There is a high correlation between vocabulary, covering the knowledge of words, and language skills, covering the mechanics of English, such as spelling and punctuation. As might be expected, both vocabulary and language skills increase with years of schooling, the mean range varying from the 64th to the 88th percentile in vocabulary and the 81st to the 97th percentile in language skills from high school graduation to college graduation.

Mean performance on all tests except typing and shorthand decreases with age, while variability increases with age. This means we find both our very lowest and our very best applicants in the group 32 years and more in age. Particularly in office checking does this group show great variability. The conclusion is that except in rare cases older persons should probably not be placed on jobs where the trait measured by office checking is of primary importance. A younger person does this type of work faster. Older persons do better in jobs requiring the use of words, arithmetic and typing. As a matter of fact, typing scores seem to improve somewhat with age.—B. W. AMES, *director, nonacademic personnel, University of Florida.*

**If you have a question on business or departmental administration that you would like to have answered, send your query to COLLEGE and UNIVERSITY BUSINESS, 919 North Michigan Avenue, Chicago 11, Ill. Questions will be forwarded to leaders in appropriate college and university fields for authoritative replies. Answers will be published in forthcoming issues. No answers will be handled through correspondence.**

## Floor Protection

**Question:** What type of temporary floor covering should be used to cover a gymnasium or ballroom floor when it is being used as an auditorium or place of public assembly?—S.E.H., Pa.

**ANSWER:** In ballroom areas, we have found that merely a good maintenance program of waxing and sealing is generally adequate for all normal foot traffic; however, when a ballroom or gymnasium floor is to be used for purposes requiring the setup and removal of temporary chairs, bleachers or heavy platforms, a temporary floor covering will eliminate damage from heavy scratches and marking. For this purpose we recommend a No. 8 tarpaulin, waterproofed and fireproofed. This covering is placed in sections to cover any or all of the gymnasium or ballroom floor area.—R. S. CHAMBERLIN, *superintendent of operations, physical plant department, University of Illinois.*

## Concessionaire Sales

**Question:** We are interested in obtaining data regarding concessionaire sales per person in attendance at athletic events in stadiums. Do institutions generally handle these sales themselves, or are they leased on contract? If the concessions are institutionally operated, how detailed an audit is maintained?—J.G., Neb.

**ANSWER:** It is my belief that some existing institutional agency usually handles concessions at athletic events. In such cases, the management of the agency should have no difficulty in charging out the merchandise and collecting for it.

If concessions are farmed out on a flat fee basis, the institution would want information about the total sales to satisfy the management that the fee was reasonable and fair. If concession privileges have been let on a commission basis, a financial statement showing details of all transactions should be submitted to the institutional management immediately after each game.—F. L. JACKSON, *treasurer, Davidson College.*

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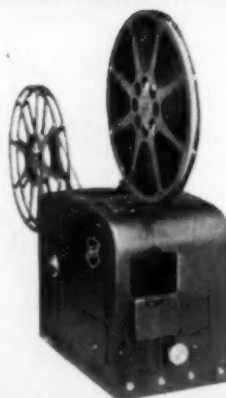
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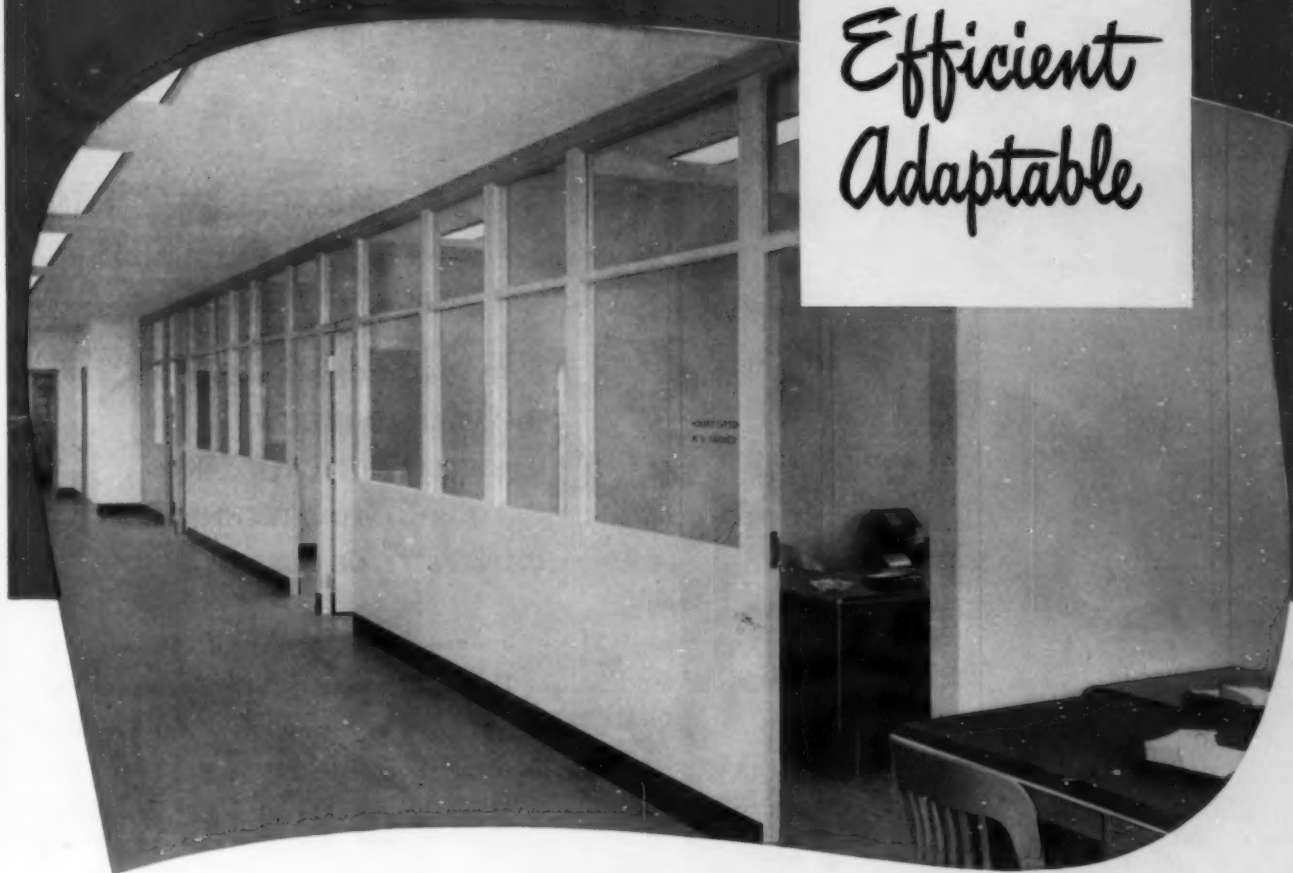


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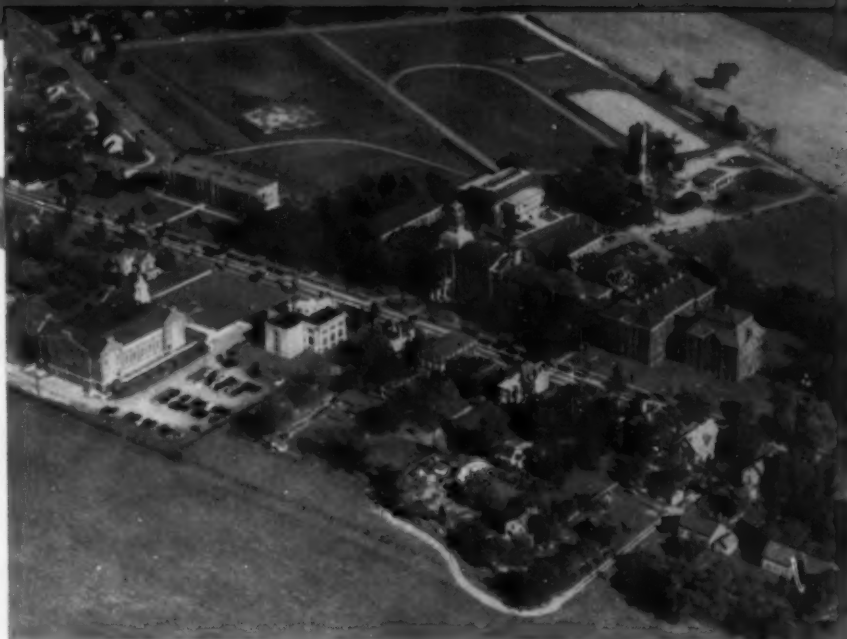
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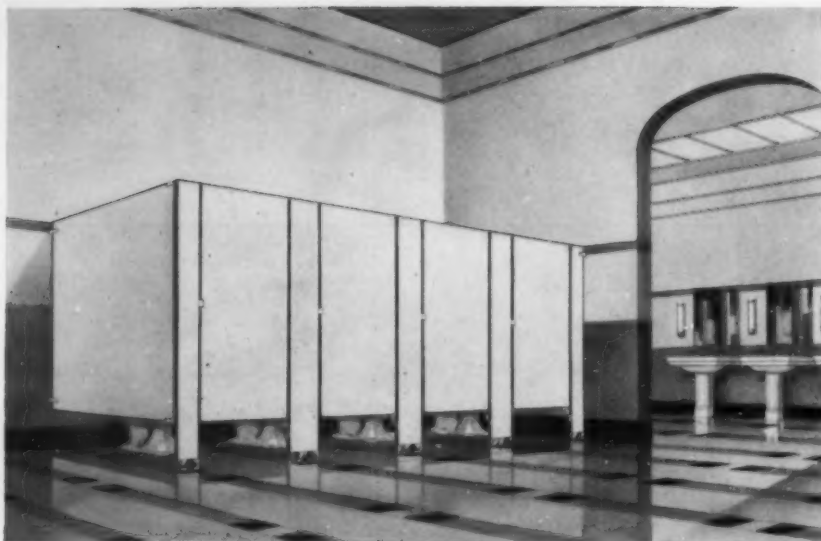
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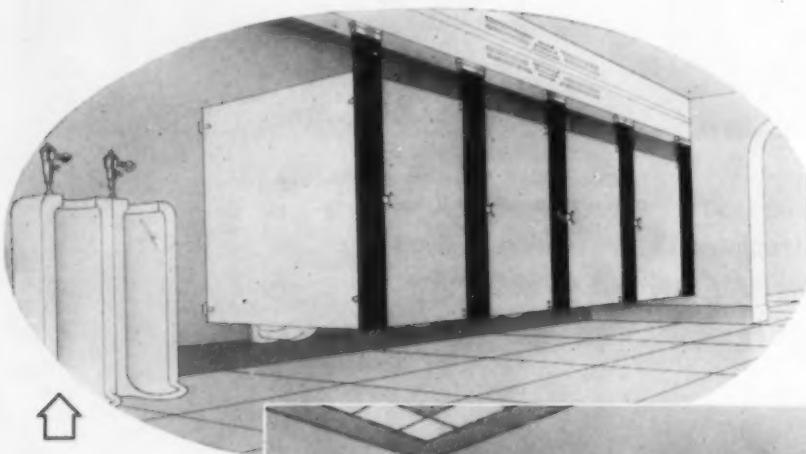
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Sanymetal Century Type Ceiling Hung Toilet Compartments are particularly appropriate for schools. They impart dignity, refinement and cheerfulness to the toilet room environment. They make up into a rigidly fixed installation. Available in two full purpose materials: (1) "Porcena" (Porcelain on Steel); (2) "Tenac" (Baked-On Paint Enamel over Galvanized, Bonderized\* Steel).



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**Sanymetal\***  
**"PORCENA"**  
(Porcelain on Steel)  
TOILET COMPARTMENTS

\*Treated with "Bonderite", a product of Parker Rust Proof Co.

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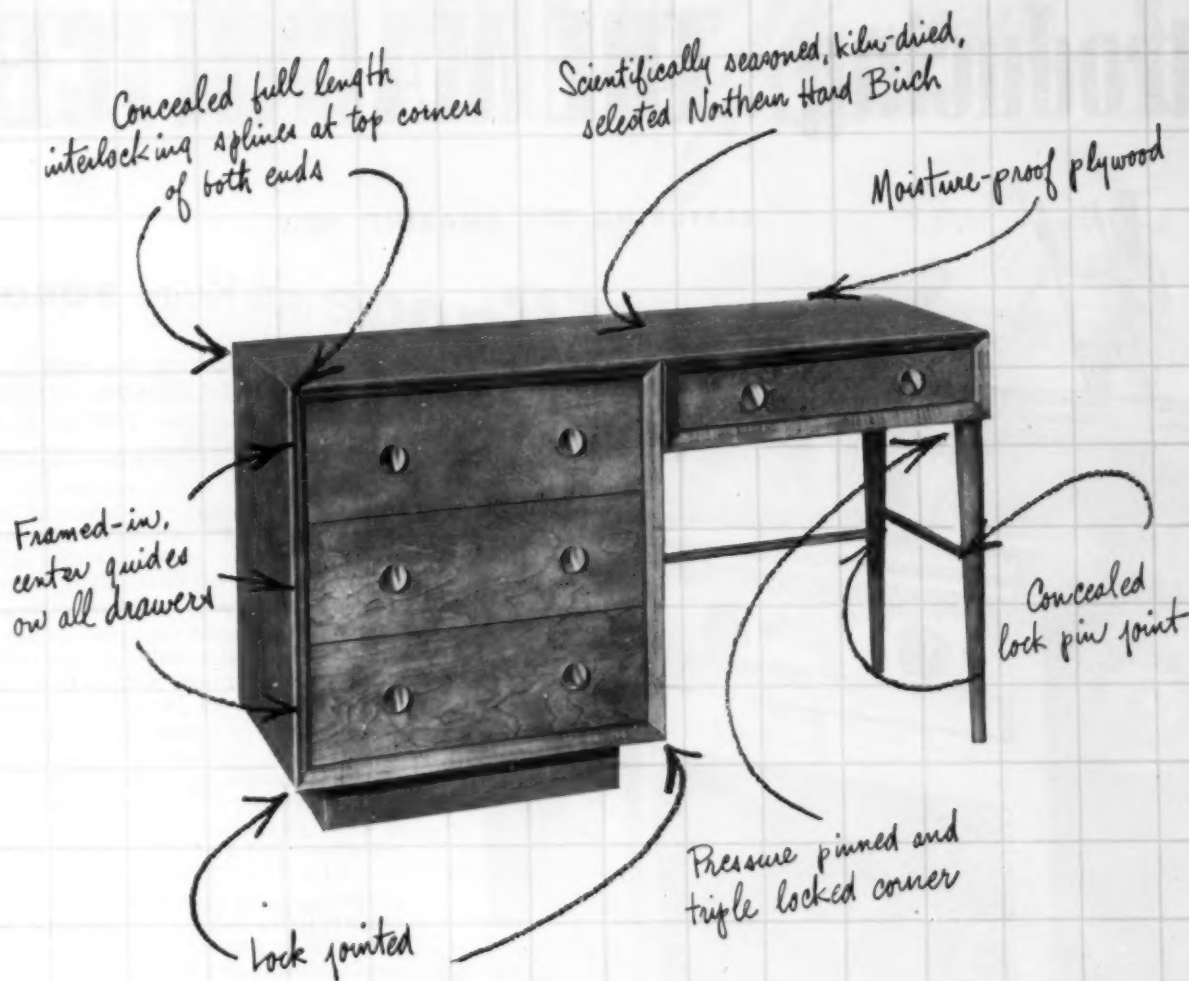
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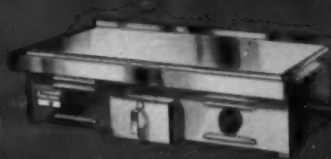
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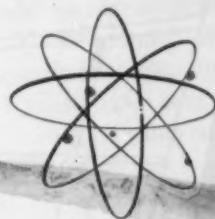
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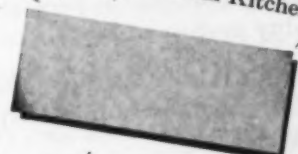


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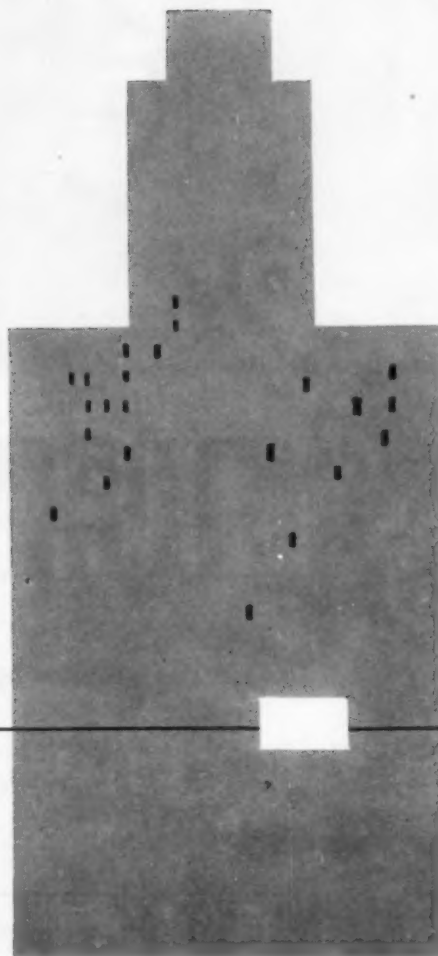
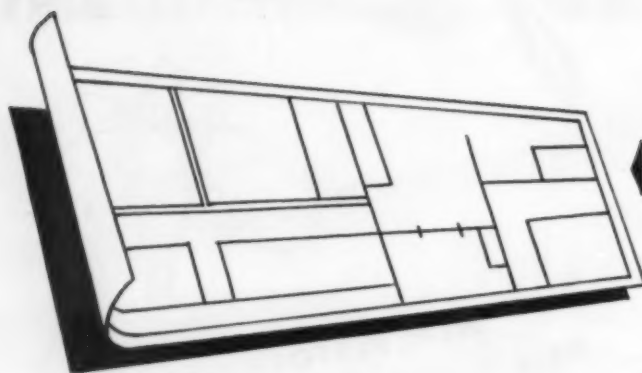
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## THE PRESIDENT'S DOOR SHOULD ALWAYS BE OPEN

**ALONZO F. MYERS**

Chairman, Department of Higher Education  
New York University



I RECENTLY COMPLETED A ONE-YEAR SABBATICAL leave of absence that was spent on nearly 100 college and university campuses in all sections of the country. In 1940-41 I spent a year in a similar manner. Of all the numerous changes that have occurred in the period between 1940-41 and 1948-49, the change that impressed me as being the most disturbing is the great deterioration that has taken place in the matter of communication and participation among the four indispensable elements in the operation of a college: students, faculty, administration and trustees.

In 1948-49 I found communication to be exceedingly poor on college campuses. There is one obvious explanation of this. Nearly all colleges are much larger than they were in 1940, and most are much larger than they should be. They lack the staff, the plant, the equipment, and the financial resources to do a good job with present inflated enrollments.

Administrator-faculty relationships have deteriorated on many campuses. Poor communication is largely responsible. Several college presidents informed me that they did not know the faculty so well in 1949 as they had known the student body in 1940. It would be grossly unfair to blame college presidents, or, for that matter, to blame college faculties for this deterioration. Primarily, it is the situation that is to blame.

College presidents are much too busy these days. They are confronted with appalling shortages in almost all essential categories: faculty, buildings, equipment, library, parking space. In their efforts to obtain funds to overcome these shortages most presidents must be away from the campus for a greater part of the time. Consequently, all too often the president just does not know the members of his faculty, and they do not know him.

Higher education long has been plagued by a preference on the part of many boards and administrative officers for permitting faculty members to know as little as possible about budgetary and financial matters. At one private liberal arts college faculty morale was so low at the time of my visit as to be almost nonexistent.

The most objective evidence that faculty members had regarding the financial condition of the college was the great increase in number of service personnel employed on the campus. They reasoned that if money was available for a greatly increased crew of plasterers and painters there must have been some money that could have been used for faculty salaries. If they had been permitted to know as much as they were entitled to know about the financial condition of the college, as well as about the urgent need for long-deferred repairs to the physical plant, they might have felt that what was being done was reasonable.

At the student level the situation usually was worse than it was among faculty men. I had meetings with members of the student council at most of the colleges that I visited. Usually they were badly demoralized. Frequently they stated frankly that they were stooges of somebody, sometimes of the dean of women, sometimes of the president. As a result, they said that more than 90 per cent of the student body was completely apathetic toward the whole complex organization for student government and student activities, believing that it was a farce and that it was unimportant. They said that they did not know the faculty and that they had almost no contacts with faculty members outside of class.

At some of the colleges there was high morale on the part of both students and faculty. In these colleges there were good communication, absence of suspicion, and the maximum of participation. I never found bad morale on the part of a student council when its members were able to tell me that the president's door always was open to them.

I am convinced that there are too many private offices on college campuses. There should be no secretary barring the student's access to deans, departmental chairmen, and professors. The staff is there for the purpose of working with students. The only good excuse for not seeing a student when he wants to see us is that we are conferring with someone else. Private offices guarded by secretaries are one of the greatest obstacles to good communication on the college campus.



# Looking Forward

## Who's Right?

FOR MANY MONTHS THERE HAS BEEN CONSIDERABLE pro and con debate on the subject of tax exemption as it relates to college operation of noneducational enterprises. New York University has been the target of criticism because of its relationship to the C. F. Mueller Company, spaghetti manufacturing concern. On this subject Chancellor Harry Woodburn Chase of N.Y.U. makes the following pertinent comment.

**Pro:** "New York University does not own, operate or control the management of any industrial concern; nor does it own stock in any such concern. Alumni and friends of the university have, on their own account, in some instances purchased industrial businesses and have dedicated to the university all profits which may be made in the operation of such businesses.

"All taxes applicable to other business corporations are being currently paid in connection with the industrial businesses acquired by the alumni and friends of the university, or reserves are being set up for such taxes, pending a judicial determination as to whether the businesses are entitled to tax exemption.

"John Gerdes, former chairman of the New York University Alumni Fund, has been active in the acquisition and management of these businesses. In his testimony before the ways and means committee of the House of Representatives on Dec. 12, 1947, he stated that he and his associates could find no moral or legal difference between income received by educational institutions from investments in securities and real estate, as to which tax exemption is conceded, and income from investment in a business.

"Regarding the erroneously alleged unfair competitive advantage which a foundation may have in the conduct of a business not subject to income taxation, Mr. Gerdes said:

"Income tax exemption does not create profits. At most, it enables a retention in the business of a larger proportion of the profits, if any, which have been made. The impact of income taxes occurs only upon profits after they have been earned.

"In some instances educational institutions may plough back into the business all earnings including sums otherwise payable by business competitors as federal income taxes. If this be deemed to give an unfair competitive advantage to the tax exempt business enterprise, the remedy is simple. Amend the federal tax laws to provide that the tax exempt institutions deriving profit from the operation of businesses be compelled to use currently for educational purposes a sum at least equivalent to the amount which a business concern

having the same profits would be compelled to pay in the form of taxes."

A contrary view on this subject is taken by J. R. Killian Jr., president of Massachusetts Institute of Technology and chairman of the committee on taxation and finance of the Association of American Universities, who makes the following statement.

**Con:** "Any abrogation of the long-standing principle of tax exemption would imperil our system of privately financed education. The business investments which are now under criticism are symptomatic of the financial plight of our privately supported educational institutions. While I believe that any encroachment on the tax exemption principle is dangerous, I also feel that our colleges and universities have a responsibility not to engage in business or investment practices which might be reasonably judged to be borderline or outside the tax exempt area.

"I believe that a different situation arises when a manufacturing or commercial business is carried on by a separate entity which would certainly not be entitled to tax exemption if all of its property and income were not dedicated to some university, and when such manufacturing or commercial business has no connection with the educational or research work of the university other than the attribute of producing income for it.

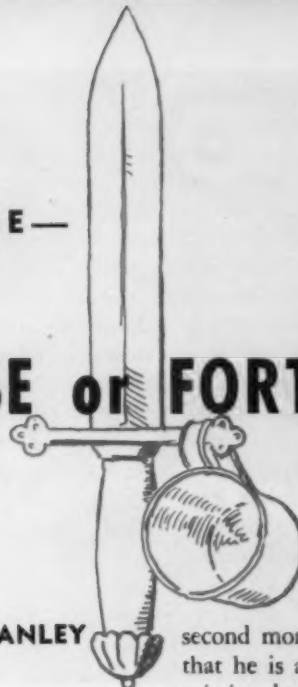
"I believe that it is sound policy for a university not to seek tax exemption for such a separate entity and not to enter into a transaction involving such a separate entity if the advantage of the transaction depends upon the separate entity being free of federal income tax. I believe it would be proper to require these separate entities to pay the corporate income tax and I advocate that this be done. Dividends or other distributions of income by such separate entities, however, should not be taxable income to the university.

"The taxation of such separate entities would cover practically all the business investments that have been subject to criticism and would facilitate drawing a clear line between what should be taxed and what should not be taxed. Few boards of trustees of a university would be willing to accept the liability which would be involved if business enterprises were to be owned directly by the university, rather than by a separate corporation or foundation."

**Comment:** Until there have been drastic alterations in the tax exemption provisions of the Internal Revenue Act, colleges expose themselves to fewer tax hazards in their investment policy if they are consistent with the position taken by President Killian. The policy being followed by N.Y.U. may conceivably threaten the entire tax exemption structure as it now exists.

## THE SMALL PRIVATE COLLEGE—

# ALMSHOUSE or FORTRESS?



ROBERT P. STANLEY

RECENTLY I WAS INTERVIEWED CONCERNING the post of public relations officer for a small private liberal arts college. Reduced to simple terms, I would have become a bird dog. I would have been required to develop a nose for money, to recognize rich people by some keenly developed sense (not, of course, olfactory), to bring them to point, and to flush them upon command so that the gunner in the person of the college president could grass them with a well directed shot.

Even this definition is something of a euphemism. Actually, my activities would have been more similar to those of Kipling's hero Kim, who acted as chela for a mendicant holy man. Kim, you may remember, softened up along the way those who might provide a bowl of rice or a sweetmeat. He did it by explaining the nobility of purpose and the close affiliation between his lama and the multicapital deity who could bestow benefits through the intercession of the holy one.

### RUDE AWAKENING

I approached this interview firm in the belief that the private small college, and particularly the college of liberal arts, performs a useful function in American society. I also held the belief that schools of this kind combine to form a strong unit in the defense of a democratic society against the welfare state. I believed that one of the distinguishing characteristics of a democracy was the voluntary support of its social institutions. I was rather shocked to come face to face with the inescapable conclusion that at least some and possibly most of these institutions operate today as objects of charity rather than as participants in philanthropy.

Stripped of circumlocution, the function of the president of today's small independent college is to raise money and to keep on raising money in a way that puts his institution on an eleemosynary basis. His scholarship, his administrative skills in the academic aspects of his college are subordinate to his ability to provide funds. These funds are obviously necessary because the small college, unsupported by the public treasury, must compete for students with the state universities and for funds with the tremendous private universities with successful football teams. Without the beneficence of millionaires who buy fame and glory by giving money to meet deficits, with no more than token support from the gigantic philanthropic foundations, these colleges seek to meet their needs for capital funds and operating expense by methods distinguishable from those of the Salvation Army tambourine only by a pretentious dignity which their methods belie. The invitation to the campus, the emotional orgy of convocation, and the singing of nostalgic chants are close kin to the street mission, complete with zither.

It is certain that the presidents of these colleges in the main have no stomach for the rôle in which they find themselves cast. They are inveigled into their posts by trustees who seek in one man an intellect capable of winning the doctorate, a talent for academic administration, a zealot's enthusiasm for instructing the young, plus the professional beggar's capacity for servility. They hire him for less than he is worth, and on the

second morning in office he discovers that he is actually working on a commission basis. It is a high tribute to men in these jobs that they manage to perform their many faceted tasks as well as they do and that they manage to hold these jobs for an average of from four to six years. It is no wonder that so many of them return to the relative calm of faculty status at a sacrifice in financial reward or turn their talents to the insurance business, where the commission arrangements are more forthright.

### THREAT OF SOCIALIZATION

The crying shame in this situation is that it perpetuates itself unnecessarily. The whole basis on which colleges solicit funds is subject to re-examination and the date of that re-examination cannot be too soon. As the number of those who combine solvency with charitable impulse decreases, the threat of collapse of this system increases, and the day draws nearer when only Mr. Whiskers can afford to pay the bills. It is happening in the hospital field today where already the Public Health Service, with an annual kitty of \$150,000,000 in tax money, is the greatest single influence. The threat of socialization is a grim reality which hospitals today are facing. It has happened in England and it can happen here if a way is not found by which hospital deficits can be met without further handouts from federal government.

The same alignment of forces between the welfare state and voluntary support of social agencies is at work in the college field, and the battle line is drawn sharply at the level of the small independent college. It is possible that these colleges can do

something about it, but they cannot do it through rugged individualism. It is increasingly difficult to interest rich people in a big city in the sad plight of a small college in an insignificant rural area a hundred or more miles away. Yet these are the people upon whom colleges depend for the funds to meet their deficits. To be sure, a particularly energetic college can put a still bigger bite on the alumni. However, alumni loyalty can be played upon year after year for a continuing support provided it is not taxed too heavily. Unless it is taxed heavily it will fail to provide the large amounts needed for important capital requirements.

The rich people who lend a friendly ear to the pleas of Squedonk College are necessarily inhibited by the certain knowledge that day after tomorrow they will be approached by special pleaders for Pedonk. Their charitable impulses are sure to make them targets for college after college with only the most remote claim to their contributions. Present tax structures are making it almost impossible for new fortunes to be amassed upon which social institutions can draw. It is important, therefore, that these institutions seek a basis for raising funds more reasonable than the individualistic and competitively mendicant methods which are now almost universal.

#### **SUGGESTS A PLAN**

In the course of my interview I asked why all the colleges of a similar nature in the state did not band together to broaden the base of philanthropy on which they might depend, to remove their needs from the realm of charity, and to approach rich people with an exposition of fact which would enlighten their self-interests. Such a plan is working for hospitals in many areas; such a plan is working for Negro colleges and, properly executed, could work for all the excellent little colleges of the country.

It would require, unquestionably, a sacrifice of a little autonomy—a sacrifice small indeed when compared with the inevitable loss if the federal government decides to pick up the check. It might be a shock to many colleges where today there is a whimsical kind of bookkeeping based more on expediency than on reason. Such a plan would entail clashes among its participants as to who was to get

what and how. Intramural jealousies over salaries and rank would undoubtedly be magnified when they got onto an intercollegiate basis. Rivalries would probably overshadow the rivalries of the basketball court and the athletic field.

Other complications would undoubtedly arise as they do in any co-operative effort. It may be that complications have prevented the development of such effort in the past, for surely there is nothing new in the banding together of social institutions for the common purpose of raising funds. Nevertheless, if the attainable goal is worth while, adult human beings at the intellectual level of masters and doctors should be able to approach the problem in an adult way and meet it effectively.

#### **MAKE STORY CONVINCING**

Would combined effort work and would it produce for a group of, let us say, 10 colleges more than 10 times the tangible result of individual effort? The Negro colleges of the South have found an affirmative answer to that question. The small private colleges should be able to do as well or better. It should not be difficult to build a story in behalf of the long-range importance of small college education 10 times as convincing as a story that will merely reach through the nobler emotions to the pocketbook nerve in behalf of a single and fairly obscure institution.

Whether we like it or not, America today is reaping one of the harvests of democratic government which elsewhere in the world has made democracy the tool of those seeking the ultimate establishment of the welfare state. It has been a development of our times that people with the right to vote have voted themselves benefits and have implemented these benefits through government. In so doing they have relinquished private control and placed it in the hands of professional politicians who maintain themselves in power by offering still further benefits.

It is partly through the acts of evil self-seekers in government and partly through the acquiescence of men of good will that social institutions become absorbed in the governmental structure on the all-too-plausible theory that only in this way can their benefits be equably distributed to all the people. If equable distribution were the only result, no thinking man

or woman anywhere would oppose it.

The inevitable corollary result is government control. So far hospitals have managed to benefit from government funds without giving over real control. Public education has managed to benefit to some extent similarly while retaining control no more remote than at the state level. Tax supported universities have derived some dubious benefits of the same kind and as yet have ceded almost nothing to federal government. Private colleges, being politically weaker and with no widespread public interest in their fate, may not fare so well if they fail in calling forth adequate private support and ultimately accept federal financial assistance.

It is peculiarly in the small private college and especially the liberal arts college that there lies the greatest opportunity for exposing youth to practical experiences in democratic living. Larger colleges, whether private or tax supported, cannot provide the same degree of democracy in action either in the conduct of the student body or in the administration of curriculum. All these things and more can be woven into a story that will appeal to the practical and enlightened selfish interest of rich people. This is a much more respectable and forthright approach than that which attempts to appeal mainly to the charitable instincts of men of sufficient means to be of real help to the individual college.

#### **PLAN WOULD HELP PRESIDENT**

If a plan of cooperation would in fact relieve the fiscal plight of its participants and do no more, it would be worth while. There is reason to believe that it would do far more. It would restore the self-respect of the college president and lessen the burden on his time, the strain on his spirit. He might even be paid an adequate salary without the haunting certainty that his remuneration was in virtually direct proportion to the money he brought in.

That part of public relations activity now devoted to sniffing out tractable millionaires could be accomplished in a pooled promotional program on a scale that would permit the employment of top flight talent at top flight salaries. In the long run, such a program might even provide a lot of capable, knowledgeable and devoted men with two suits of clothes a year.



In emergency situations, the faculty member should see the purchasing agent to designate his need, where and when material should be delivered, and to suggest the source of supply.

THE PROCESS OF EDUCATING departments in purchasing procedure is a never-ending one and varies considerably, depending upon whether you are a private institution or a public tax supported institution, and your size. Since my position is with one of the larger public tax supported institutions, my experiences and problems may not apply to private institutions but should be typical of any institution governed by laws on our state statute books. These laws, of course, vary slightly in the different states but in the main are relatively similar.

Our observation is that some departments of our institution are rather hard to keep in line on procurement of material and getting the vendor paid. In the first place, the secretaries in the departments usually take care of these details and since there is a frequent changing of personnel, this makes the educational process a continual one. Also, many departments are rather dilatory in carrying out their part in clearing invoices for payment after the goods have been received.

We therefore believe it is beneficial to the purchasing department to publish and distribute to the various departments a memorandum covering purchasing procedure. This memorandum should go into detail regarding all phases of procurement and settlement of accounts.

We mail these memorandums with a letter of enclosure to the heads of all departments on the campus and ask them to make it their responsibility to see that they are understood in every detail by each member of their departments and that they are retained for ready reference.

Of course, our department usually assumes the responsibility of settling all accounts. Regardless of how much educating you try to do, there always will be a few departments that give

From a paper presented before a regional meeting of the Texas-Oklahoma-Arkansas group of the National Association of Educational Buyers.



Continental Illinois National Bank & Trust Company of Chicago

### *Educating department heads in*

## **PURCHASING PROCEDURE**

**L. D. MEYER**

Purchasing Agent  
Oklahoma A. & M. College

trouble—either they make occasional unauthorized purchases, hold invoices and/or freight bills received in their departments, or they fail to sign and send in the receiving report when the material is received. With those departments that consistently give trouble by making unauthorized purchases, we are sending them the invoice when it is received by this office and telling them to settle the account themselves as it is an unauthorized purchase. We also notify the vendors to this effect and ask them to contact the party making the obligation. This soon impresses upon them the trouble unauthorized purchases cause and how important it is that they follow regulations. This procedure has done more to eliminate purchasing irregularities than all the pleading we could do.

A typical memorandum outlining proper purchasing procedures follows.

#### **LATEST MEMORANDUM**

Since new rules and regulations regarding purchasing for the state of Oklahoma went into effect within the last year and many new people are

on the campus who are unfamiliar with such procedure, the following information has been compiled to assist departments in following correct procurement regulations.

When a department wishes to purchase supplies, equipment or services, it must issue a requisition for the item or items of like nature. This requisition must give full information as to specifications, delivery date desired, and cost. If the correct cost is not known, the amount must be in the "estimated" column of the requisition; if it is known or quoted, the amount must be in the "quoted" column and the date of the quotation and the f.o.b. point must be shown at the bottom of the requisition. The quotation should be attached to the requisition. If catalog prices are used, this must be stated in the face of the requisition and "that they are subject to change."

It must then be processed through the office of the dean to the business

manager's office, where the departmental account is obligated and the requisition passed on to the purchasing department. Not until then does it become an order to purchase. The purchasing department then will send an official purchase order to the best vendor. If the requisition is for more than \$200 and competition is available, requests for quotations will be sent to at least three suppliers and the order placed with the lowest and best bidder. If the item is of such a nature that no competition is available, the order will be sent to the vendor designated by the department. Orders of more than \$1000 must have the approval of the board of regents prior to being placed. This board meets the first week of each calendar month, and this extra time must be anticipated for the placing of the order. Oklahoma firms must be given preference whenever possible.

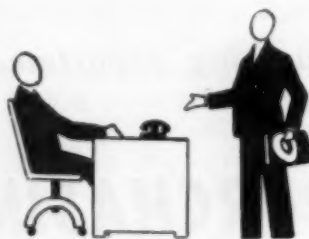
When the purchase order is made up by the purchasing department, the issuing department will be sent a copy of the order known as the receiving report. This serves as a notice that the order has been placed. This receiving report must be retained only until delivery of the order has been satisfactorily completed. It then must be signed in the lower left-hand corner and returned to the purchasing department. This is very important as the item cannot clear for payment until the signed receiving report is received. Also, should your department receive any invoices, credit memorandums, or freight or express bills, they must be sent immediately to the purchasing department. Payment cannot be made without these and since many invoices carry discounts for prompt payment there should be no delay in getting them to the purchasing department to allow it to take advantage of any discount offered. These invoices should be sent in even if they cover only part of the order and before the shipment is received as the purchasing department may be able to make a partial payment against the order and take the discount. It is required that all time discounts of more than 50 cents be deducted from the invoice when payment is made.

**Damaged Shipments.** Should unsatisfactory material be received, the vendor must be notified immediately and a copy of the letter should be sent to the purchasing department. If the vendor has shipped the wrong

merchandise, the company is usually cooperative in making proper adjustment. If the error is made by the department, a 10 per cent restocking fee sometimes is charged, plus the cost of transportation. *Do not* return goods without first obtaining the permission of the vendor and notifying the purchasing department.

#### FILING OF CLAIMS

In case shipments by insured parcel post are received in a damaged condition, claim may be filed with the downtown post office by taking the package and contents to it for an inspection, or the shipper may be notified to file the claim so that a replacement can be sent, but if this is done the post office still will require



an inspection of the package and contents after it receives the claim from the vendor. If an uninsured parcel post shipment is damaged, claim must be filed with the shipper.

In case any "concealed damage" shows up on opening a package shipped by freight or express, the receiving department must immediately be notified. It will request an inspector from the transportation company so a report can be made and claim filed.

**Approval for Payment.** When satisfactory delivery has been made, as will be evidenced by your signing the receiving report and sending it to the purchasing office, the item will be "approved for payment." At that time a white copy of the order will be sent to the issuing department signifying that the obligation has been approved for payment. This copy is a permanent record, giving full details, such as invoice date, number, items paid, unit price, and total cost. It also shows the date approved for payment, and payment can be expected within 30 to 60 days following such approval. Discount items are paid by petty cash through the bursar's office. After approval, the invoices and receiving re-

port then are sent to the accounting department. Warrants are mailed to the vendor from the chief clerk's office.

When making inquiry to the purchasing department about an order, give the requisition number and name of the vendor. Also, keep in mind that the receiving report signifies that the order has been placed, and allow sufficient time for delivery to be made before inquiring about the order.

If material is delivered to your department that you did not order or cannot identify, call the purchasing department promptly, since occasionally shipments are misdirected by the vendor. Receiving reports should be checked carefully and proper notations made to indicate any change in quantity, description, substitutions, canceled items, or returned goods. Failure to do this causes loss of time by creating unnecessary telephone calls and letters.

Failure to indicate the proper F.O.B. point causes confusion regarding payment of freight, express or parcel post charges, when either prepaid and added to the invoice, or collected and paid by the chief clerk's office.

**Duplicate Payments and Shipments.** Duplicate payments occur only when a department issues two requisitions to cover the same invoice. This is a departmental responsibility and your records should be carefully checked before issuing a requisition. Always refer to invoice date and number to see if it has been paid.

Duplicate shipments usually occur when an order has been placed by letter, telegram, telephone or verbally, and this information has been omitted from the requisition.

**Emergency Purchases.** Emergency and rush purchases are of necessity costly and should, therefore, be discouraged. Using departments are urged to anticipate their requirements for supplies and equipment a sufficient length of time in advance of the need for them to allow for the routine handling of requisitions, the obtaining of bids, the issuance of purchase orders, and time for the delivery of merchandise before the need becomes acute. There will arise, nevertheless, emergency situations that cannot be anticipated by some departments or that must be met regardless of whether the department should have anticipated its needs and ordered the supplies in advance. In cases of this nature, the purchasing office must act

quickly to procure such needed materials and supplies in order to keep the using department functioning smoothly and efficiently.

In such cases, the faculty member concerned is urged to call or come to see the purchasing agent, to state his need, to designate the place to which the materials or supplies should be delivered, to state the time at which they must be available, and to suggest the source of supply. The purchasing agent will then take immediate and proper steps to purchase such emergency supplies by telephone or telegraph and to have them delivered or picked up as quickly as necessity dictates.

#### TIME A BIG FACTOR

The purchasing agent usually will not be able to shop the market as thoroughly for emergency needs as he would if adequate time were allowed. Many items will, of necessity, be expensive under such circumstances. When such items or supplies are ordered in advance and delivered as part of a larger order, they cost less than when emergency purchases are made. The purchasing office discourages, insofar as possible, such emergency requisitions.

**Blanket Requisitions.** Blanket requisitions are a convenient method of making various small purchases from any vendor. Such a requisition may be issued to a chosen vendor to cover anticipated small purchases. These blanket requisitions should be relatively small amounts and must not be "overspent." When total purchases from a firm aggregate the amount of the requisition it must be closed out by signing the receiving report, attaching all sales tickets to it, and sending it to the purchasing department for clearance.

Merchants prefer that these blanket requisitions be cleared out every 30 to 60 days, which should be done unless arrangements have been made with the company to carry the account for a longer period of time. If further purchases are anticipated from this vendor, another blanket requisition should be issued to him.

The person responsible for signing the receiving report should check with the vendor to verify the account before sending the receiving report to the purchasing department.

No purchases may be made against the requisition until after it has cleared the accounting office and the

official purchase order has been sent to the vendor by the purchasing office. The state auditor will not honor sales tickets dated before the date of the official purchase order.

Use extra caution to see that sales tickets are not lost; it is difficult to pay them after the requisition has been cleared for payment.

**Unauthorized Purchases.** No individual has the authority to enter into purchase contracts or in any way obligate the college for any indebtedness unless specifically authorized to do so by the board of regents, the president, or the business manager. Even if a particular problem is discussed by the department head with the president or the business manager and approval is obtained, the purchasing agent must be informed so that a purchase order may be issued and all documents handled in routine fashion.

Firms ordinarily doing business with the college are aware of this policy and are advised that all purchases chargeable to Oklahoma A. and M. College must be authorized by an Oklahoma A. and M. purchase order signed by an authorized individual. The college will not undertake to reimburse officers or employees for the cost of any purchases on behalf of the college unless previous arrangements to that end have been made.

**Correspondence With Suppliers.** In corresponding with suppliers concerning purchase orders, please give their order number if available, our requisition number and date of order. A reasonable length of time should be allowed before writing a company about delivery, and you should never

write to it without verifying your receipt of the receiving report.

A copy of any correspondence the purchasing department receives regarding the order, other than acknowledgment, will be forwarded to the department.

In cases requesting additional technical details the department should answer the letter and send a copy of it to the purchasing department.

Keep in mind the following rules so that unnecessary delays can be avoided and prompt payment can be made:

1. Signed and notarized claims are no longer necessary.
  2. Invoices must have the name of the company printed on them or must be signed by a company representative.
  3. The period of time must be shown for subscriptions, memberships, premiums on insurance policies, rentals and utility bills.
  4. The serial numbers of equipment purchased must be listed.
  5. Make your requisition payable to the vendor, not to salesmen or officers in an organization.
  6. Tickets should be legible. This is especially applicable to bills turned in on blanket requisitions.
  7. Claims for reimbursement must be accompanied by proper receipts.
- No matter how well organized a purchasing department may be or how carefully its systems and internal procedures are planned, efficient and effective procurement can be accomplished only to the extent that those who use the purchasing department coordinate their own methods to conform with the buying procedures and help to make them workable.

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### Write for Volume Index

If you bind your volumes of COLLEGE AND UNIVERSITY BUSINESS you will want the index to Volume 8, covering issues from January through June 1950. You may obtain your free copy by writing to COLLEGE AND UNIVERSITY BUSINESS, 919 North Michigan Avenue, Chicago 11, Illinois.

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# FORMULA PLANS

**C. SIDNEY COTTLE**

Professor of Business Administration

and

**W. TATE WHITMAN**

Associate Professor of Economics  
School of Business Administration  
Emory University

IN RECENT YEARS EDUCATIONAL institutions, caught between low interest rates and soaring operational costs, have shifted endowment funds increasingly into common stocks.<sup>1</sup>

To the extent this has taken place, the successful management of the equity portion of such portfolios has grown in importance. Successful management, in turn, is dependent upon the skill with which the problems of selectivity and timing are solved. The former involves decisions as to *what* to buy or sell, and the latter *when* to buy or sell.

## GROWTH OF FORMULA PLANS

In an effort to solve the timing problem, so-called formula plans have been devised. Although they now are used by all types of institutional investors, educational institutions have been in the forefront in their development and adoption in the United States.

Just as an illustration, one of the earliest was the plan instituted in 1938 in connection with the administration and management of the common stock investments of Vassar College.<sup>2</sup> Since that date Yale, Oberlin, Northwestern, Kenyon and Mount Holyoke either have adopted formula plans or are using them as general timing guides.<sup>3</sup>

<sup>1</sup>A study of college portfolios by Scudder, Stevens and Clark revealed that common stock holdings at book value were increased from 11 to 30 per cent of the endowment funds over the period 1931-1946. Survey of University and College Endowment Funds, p. 19. See also, J. Parker Hall, Current Tendencies in College Investments, Journal of Finance 4:129 (June) 1949.

<sup>2</sup>From a reprint of an article by Roy Morris, Common Stock Control Plan of Vassar College, Bulletin of the American Council on Education, Financial Advisory Service.

<sup>3</sup>Hall, J. Parker, *op. cit.*, p. 133.

To our knowledge, other colleges employ modifications of the formula-plan approach.

The use of formula plans by other institutional investors, such as banks and insurance companies, also has increased rapidly over the last 10 years. In 1947 Lucile Tomlinson estimated that the investment timing policy of funds totaling possibly \$1,000,000,000 was guided by formula plans.<sup>4</sup> Although it might be premature at this time to say that formula plans represent one of the most important financial developments of the last decade, certainly their significance and the desirability of appraising them cannot be questioned.

Administrators of educational funds, like other investment managers, seek to time the purchase and sale of equities so that stock holdings will be increased in periods of undervaluation and decreased in periods of overvaluation. The formula-plan approach to this difficult problem is distinguished by reliance upon fixed rules—a formula—for systematically controlling buying and selling action.

## NATURE OF FORMULA PLANS

There are two broad types of formula plans: constant ratio and variable ratio. The fundamental distinction between the two rests in the fact that as stock prices rise or fall the constant-ratio plan *maintains* a chosen stock-bond ratio, whereas the variable-ratio plan *varies* the stock-bond ratio in accordance with changes in the level of the market. In other words, the aggressive (primarily stocks) and the defensive (primarily bonds) portions of a fund are fixed,

<sup>4</sup>Successful Investing Formulas. New York: Barron's Publishing Company, Inc., 1947, p. 8.

or constant, in the first type of plan, and the aggressive and defensive portions are changed, or varied in terms of the price of stocks in the second.

An illustration will clarify the difference. Assume the establishment of a constant-ratio plan with a 50:50 stock-bond relationship. When the value of the equity portion has been reduced to, say, 45 per cent of the total as a result of a market decline, bonds are sold and stocks purchased until the two portions are equalized. On the other hand, when a price rise has increased the value of the aggressive portion to, say, 55 per cent of the total, stocks are sold and bonds purchased until the 50:50 ratio is again restored. Thus, whether the market (as represented by the Dow-Jones Industrial Average) is at 100, 200 or 300, stock-bond transfers will have kept the fund at 50:50.

In direct contrast, the composition of a fund under a variable-ratio plan is changed in accordance with changes in the level of the market. At 100 the stock portion will be much larger than at 200 or 300.

Variable-ratio plans, in turn, may be classified as "nonnorm" or "norm" plans. Nonnorm plans decrease or increase the equity portion of the fund with each specified rise or decline in stock prices. Norm plans decrease the equity portion when stock prices climb to or exceed some predetermined level or norm of the market and increase the equity portion when stock prices drop to or below this norm. The nature of this distinction may be demonstrated readily.

Assume that for both a nonnorm and a norm plan 100 and 250 (D.J.I.A.) are selected as the points at which maximum and minimum stockholdings will be attained. With-

# and EDUCATIONAL ENDOWMENTS



Continental Illinois National Bank & Trust Company of Chicago

in these limits, the nonnorm plan will sell stocks with, say, each 15 point price rise and buy with each 15 point decline. Whereas, the plan employing a norm, say 175, will not begin selling stocks until a rising market reaches or exceeds 175 or begin buying until a bear market drops to or below 175. Thus, the nonnorm plan permits either buying or selling at each 15 point interval throughout the entire 100-250 range. In contrast, the norm plan permits sales at 15 point intervals only within the upper (175-250) portion and purchases at the same intervals only within the lower (100-175) portion of the 100-250 range.

The primary task in the norm type of variable-ratio plan is to determine through some means a level for the market which may be considered normal. The principal purpose of this norm is to indicate that level of the market at which stocks as a whole (as measured by some stock-price index) are properly priced in terms of their long-range value. As the market rises above this level, stocks become increasingly overvalued and increasingly subject to sale. As the market drops below the median, stocks become undervalued and, as the decline continues, become more attractive buys.

There are three principal methods for determining the norm: (1) a simple moving average of the D.J.I.A. or some other market index, (2) a trend-line projection of stock prices, and (3) a so-called intrinsic value or sound investment value based on earnings, book value, or some other factor or combination of factors.

The principal task in the nonnorm type of variable-ratio plan is to ascertain the upper and lower market limits within which the plan will operate. This may be done in a number of ways.

These methods vary from the employment of relatively complex mechanical procedures to the use of purely subjective evaluations. Among the formula plans of this character familiar to us, those whose limits are based on judgment predominate.

## EXAMINING FORMULA PLANS

Because of the marked differences that characterize the several types of formula plans, considerable variations will be found in their operating results. It is essential, therefore, that the results that would have obtained from the use of any plan be determined and thoroughly examined prior to its adoption. In this manner the nature of the plan and its inherent risks and opportunities may be ascertained and appraised.

Such examination should be made in terms of a series of pertinent factors. Some might hold that yield and capital appreciation are the only important considerations, but experience discloses that other factors are of comparable importance. These include the buying and selling action under the plan, including the duration of periods of inactivity, comparative risks encountered, understandability of the plan, and the ease of its administration.<sup>5</sup>

## SOME CONCLUSIONS

An investigation of specific plans is not possible within this brief article. However, based on research contained in a special report prepared for several well known educational and financial institutions and on subsequent studies, the following broad conclusions may be drawn.

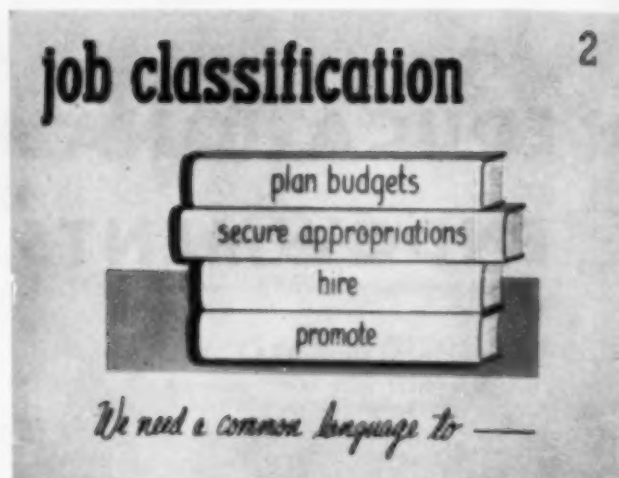
<sup>5</sup>For a more detailed analysis of these factors see C. Sidney Cottle's *Factors to Be Considered in Appraising Formula Plans*, *Southern Economic Journal* 16:62 (July) 1949.

First, implicit forecasts are incorporated in all types of formula plans. Such is inescapable in any device that seeks to guide investment timing. The nature of the forecast varies with the provisions of each plan. For example, a forecast is involved in establishing even the simplest type of constant-ratio plan. Specifically, the prediction is that in the course of its fluctuations the market will not remain for an extended number of years below the price level at which the plan is inaugurated.

Second, although it is not possible to determine with certainty the future success of any formula plan, this does not preclude historical tests. In fact, such tests have been found to be of much value in revealing the essential nature of a plan and also in ascertaining the manner in which it will operate under conditions in a given market.

Third, although certain plans may be questioned in the light of experience, the formula-plan approach offers several advantages to the manager of endowment funds: (1) because it requires a long-range approach to investment timing, management will be less influenced by the constantly shifting optimism and pessimism of the market; (2) it necessitates the formalization of management's views as to the administration of the institution's portfolio; (3) it provides a systematic program for timing the purchase and sale of stocks; (4) it induces decisive committee action as the market rises and falls.

While we consider there is no substitute for ability, a carefully devised and thoroughly tested formula plan adapted to the specific needs of an institution may well serve as a helpful tool of investment management.



**The large university needs a central office to handle**

## NONTEACHING PERSONNEL

FOR MANY YEARS COLLEGES AND universities have followed a well defined pattern of job titles and salary ranges for members of the teaching profession.

Standardization has taken place to such an extent that, when referring to an instructor, one knows at least in general terms of what his job consists, the amount of training and experience necessary to handle the job, and some type of a salary range within which he will be paid as long as he occupies that position. Usually, an instructor in one academic department performs the same level of work as that performed by one in any other department, and the same generalization can be said to apply for assistant professors, professors and persons of other academic ranks.

Historically, however, in the case of nonteaching jobs, there has been no such uniformity or attempt to follow a formal pattern of job arrangement. These jobs—the operating and maintenance “musts” for present-day modern and specialized educational institutions—have been allowed to develop in a haphazard and, oftentimes, lopsided manner. There has been little recognition of employee or departmental needs and no pattern for the

From an address given before the Southern Association of College and University Business Officers, 1950.

nonteaching employee that would parallel that for the teaching employee.

This situation has been greatly emphasized since the close of World War II by the rapid growth of student enrollments, which necessitated adding many new employees to college and university staffs. Because these jobs had to be created upon an emergency basis, it was necessary in many instances to fill them before a proper study of salary allocation or of the requirements of the job could be made and without sufficient knowledge of the qualifications of the individuals who were hired. As a result, many campuses today present a patchwork of confusion and inconsistencies.

### COMMON LANGUAGE

This personnel discrepancy became apparent a few years ago at the University of Texas, where a faculty committee was appointed to study the problems and needs of the nonteaching employee. The basic need recognized on our campus was for some sort of uniform system of job titles that would provide university officials with a common language to be used in the

hiring and promoting of employees, in planning budgets, and in obtaining legislative appropriations.

The committee found that, with approximately 2500 nonteaching employees, there existed almost 850 official job titles. It was a fairly common situation to find the office and clerical employee in one department being called a stenographer while the person doing the same work in another area was being called a secretary, an administrative assistant, or a clerk-typist.

Without some study of the jobs which would provide a standardized terminology, neither the employees, department heads, nor the president knew specifically what was meant by any one of the 850 job titles being used. Without a common language, it was difficult to know what kind of a position to ask for when an office was being expanded and a new job had to be established, and for the administration to talk to members of the legislature concerning appropriations needed by the university.

The second outstanding need in the area of nonteaching personnel was an adequate salary plan that would pro-

**CHARLES T. CLARK**

Director of Nonacademic Personnel  
University of Texas



## salary plan

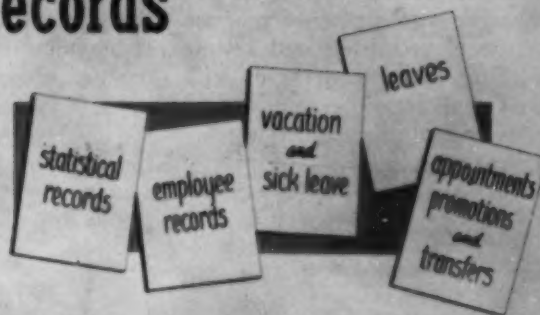
3



*We need an adequate plan to insure—*

## records

4



*Centralized Responsibility for—*

## policy

5



## services

6



*We must serve departments in matters of—*

vide for uniform recruiting rates for new employees, equal pay for equal work, an equitable system for providing merit increases for employees, a means of comparing university salaries with those of local and national competitive labor market, and a procedure for adjusting salaries to take care of changes in the cost of living.

A later study disclosed that in some instances people were paid two or three times as much money for doing a job on one part of the campus as they were paid for doing similar work on other parts of the campus. While the university had always been anxious to have its salaries in line with those of the labor market, there was no established channel by which that labor market might be determined and so recruiting and promotional salaries were fixed on a hit-or-miss basis.

A third need was in the area of personnel records. There was no centralized responsibility for personnel records, with the result that duplicate records were being kept in the president's office, in the accounting office, in the pay roll division, in the bursar's office, in the office of the academic

dean, and, in many cases, in the departmental office. Anyone who needed information concerning an employee had difficulty in finding it without a considerable amount of research. It was obvious that some central office needed to have responsibility for the processing of appointments and leaves of various kinds, for the handling of promotions and transfers, and for the accumulation of individual employment histories and distribution of information on vacation and sick leave.

### UNIVERSITY-WIDE PLANNING

Also needed was a clear-cut university personnel policy for nonteaching personnel that would define the university's stand on such things as hours of work, overtime, holidays with pay, vacations, sick leave, jury duty, appointments, promotions, separations, appeals and many other questions of policy. It was found that, while there were regulations in existence concerning many of these policies, they were not generally known by either employees or department heads, and there had been no uniform enforcement of many of these.

In some areas there was a careful and conscientious administration of university policies while in others, because of either the lack of information or the lack of interest, employees were treated more liberally than the rules would allow or were not given privileges to which they were entitled by virtue of university employment. In cases of doubt concerning the interpretation of rules and university policy, it often was doubtful as to whom questions should be directed. Most of these questions were handled by the president's office instead of by someone having matters of personnel as a major responsibility.

The last area of need was a central office to serve the various departments in matters of employee recruiting, testing, training and orientation, communications and research in personnel matters. An applicant seeking employment at the university often found it necessary to interview 15 or 20 department heads, many of whom gave tests of some kind so that a great amount of time and duplicated effort was unnecessarily spent on the part of both the applicant and the depart-

ment head before a job was satisfactorily filled. It was obvious that a central office with a planned program of personnel recruiting and testing could supply department heads with qualified applicants more quickly and smoothly than through individual departmental effort.

As has already been mentioned, many employees were not aware of

their rights and responsibilities under university policy, and it was obvious that there was a need for employee communications and for proper training and orientation to help employees better understand their obligation to the university and how their job fitted into the total university effort. In addition, without adequate research it was difficult for the administration

to make uniform decisions, which are necessary in proper administrative planning and control.

This recognition of the need for central personnel administration at the University of Texas led to the hiring of an outside, nonprofit personnel research organization, which was given the responsibility of developing a position-classification and pay plan for the nonacademic staff. A five-month study by this agency led to the adoption of a formal classification and pay plan, a formal statement by the board of regents of the personnel policies and rules relating to appointment, compensation and working conditions of nonacademic employees, and the creation of an office of nonacademic personnel in the office of the president.

This office is responsible for all positions on the staff of the university which do not entail significant instructional responsibilities or responsibilities for the administration of instructional or instructional and research functions. The director of this office is responsible, under the direction of the president, for the administration of sound personnel practices in the nonacademic service and for the recommendation of changes in regulations for action by the president and the board of regents.

While the problem with its solution is described here as it was found on the University of Texas campus, certainly the need was not unique, nor is it necessarily confined to a large campus. The problem as it presents itself seems to be the universal need of central responsibility for the various personnel functions of nonteaching personnel. In a medium or large university a separate office with an office staff is required. At the same time, the need exists in a smaller institution for the designation of some one individual as the person responsible for coordinating and handling the problems of nonteaching personnel.

Unfortunately, a look at the present policy of most college administrations toward this problem is vividly described by a Dr. Leighton\* all too accurately when he says "the striking thing about this new science of human relations is not the vast areas of what is unknown—which we are fond of emphasizing—but the degree to which what is known is not used."

\*Personnel Journal 28:155 (September) 1949, quoting Personnel Service Newsletter of the American National Red Cross.

## **The HUMAN ELEMENT in personnel work**

**SIDNEY Q. JANUS**

Professor of Psychology  
Georgia Institute of Technology

THE PRESENT-DAY THINKING IN PERSONNEL work emphasizes the need to balance the human equation in interpersonal relationships. There are stresses and strains in such relationships even as there are in the operation of machinery.

We are witnessing the development of a science of humanics paralleling in many respects that of mechanics. Humanics involves such principles as ego-involvement, personalized incentive, and intercommunication between those who execute policies and those who plan them.

The principle of ego-involvement implies that workers, unlike machines, cannot suffice with merely being task-involved. Our employees must feel their very emotions involved in their jobs, emotions of pleasantness, desire to contribute to the improvement of the job, enthusiasm, curiosity and the like. This ego-involvement only can be achieved by enabling the full participation of every worker in his work environment, which includes supervision. A worker gets a sense of belonging when his supervisor shares daily problems with him. A worker derives considerable satisfaction and self-respect from a conference with top supervisory levels in which future plans for expansion or change are outlined.

These are examples of instances involving the worker's ego rather than his mere physical presence on the job.

Excerpts from an address at the first annual institute of S.A.C.U.B.O., Atlanta, Ga.

The principle of personalized incentive involves the use of reward for a job well done in terms of the person's characteristics, not only as a worker but as a member of a family group, social group, or other classification, broader in scope than that usually ascribed to workers. The implication here is that we must get to know our employees better by a more than casual relationship.

It is not really a difficult task to cultivate a genuine interest in our fellowman's problems, particularly when we know he brings them along with him to the job. Thus, a free afternoon granted to a person with considerable family responsibilities is indeed more of an incentive to better performance on the job than a less appropriate reward of opportunity to work overtime and earn extra money.

The principle of communication between supervisors and employees is one recognized more in theory than in actual practice. It is easy to find channels for supervisors to get ideas across to workers through news bulletins, frequent briefings on the job, and conferences. However, it is just as important for workers to talk back to supervisors through media of communication other than morale questionnaires or employee attitude surveys. Grievance procedures, suggestion systems, planning committees are a few of the channels for worker communication up the line. We need to implement these and provide some more in addition.

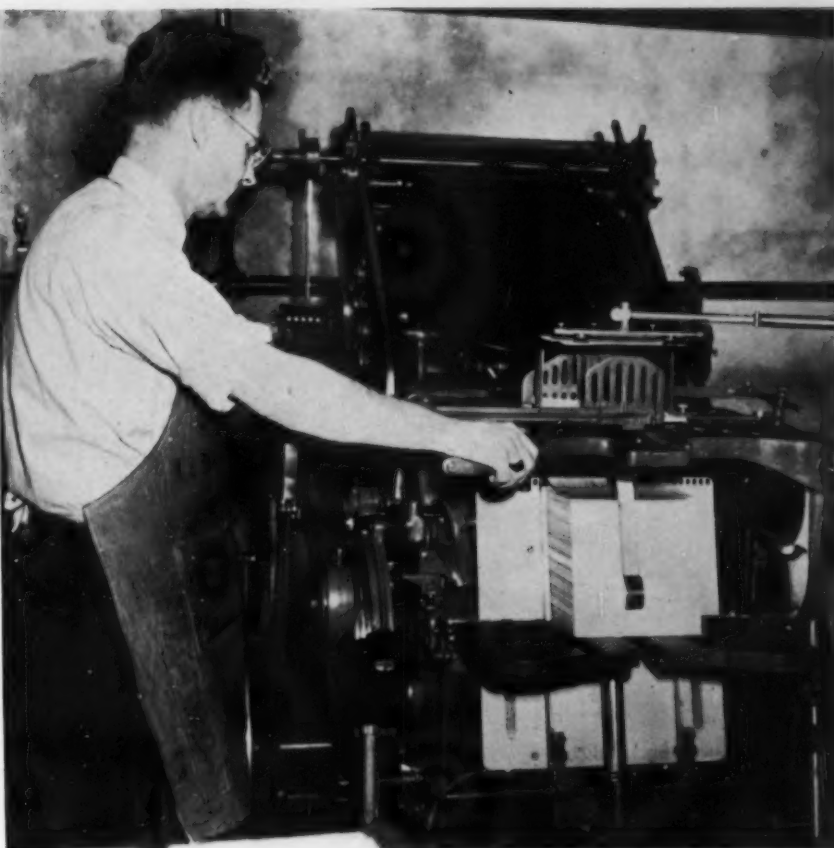


CENTRALIZATION OF ALL PRINTING, photostating, stencil duplicating, and mailing has been made at Middlebury College in the interest of economy. Our publications and publicity department is responsible for these services in addition to many other major duties, such as public relations, editing the alumni magazine, publishing eight promotion bulletins a year, producing college motion pictures, and acting as an official photographic agency for the college. Earlier this year, Middlebury released a 25 minute color motion picture depicting life on the campus of this 150 year old Vermont college.

Prior to World War II, a small print shop was established in the basement of Painter Hall, the oldest college building in Vermont. This shop was set up to handle a portion of the growing printing demands of the institution with an enrollment then of 800 students. From this small student operated shop of 1939, consisting of a lone rebuilt hand fed press, we have developed a print shop that in 1950 is doing approximately \$10,000 a year business. This represents a saving of nearly \$3000 that it would have cost the college to have this printing done in a commercial plant.

However, the convenience of a college operated print shop cannot be measured in terms of dollars and cents. Such a shop results in saving in the secretarial help that would be needed to mail out printing, as well as transportation costs to and from a commercial printing company, the nearest of which is 35 miles from Middlebury. Most important of all, the finished product of the college print shop is more likely to reflect fine workmanship and to meet the desires of the faculty or administrative employees, who are most appreciative of the printing services furnished them by their college.

A college printer can help reduce printing costs by curtailing the extravagant demands of certain members of the college family. Stewart P. Jamieson, manager of our shop and a printer with more than 20 years' experience, states that the cost of Middlebury printing would rise by leaps and bounds if the average faculty or ad-



*Middlebury operates a*

## **CENTRAL PRINT SHOP**

ministrative employee were able to send material directly to commercial printers without professional advice being given on the campus in the interest of economy.

The print shop equipment is centered upon a 12 by 18 foot automatic press unit. There is also other ample equipment, such as type, proof press, cutters and so forth, to handle the printing wishes of people seeking to have small jobs done, such as stationery, letterheads, programs, various administrative and faculty forms, and posters. Major jobs like printing the college bulletins and alumni magazine are handled by an outside commercial printer.

Middlebury, with a student population of 1200 men and women, has found, in the operation of its print shop that it cannot afford the luxury of a

### **GEORGE H. HUBAN**

Director of Publications and Publicity  
Middlebury College  
Middlebury, Vt.

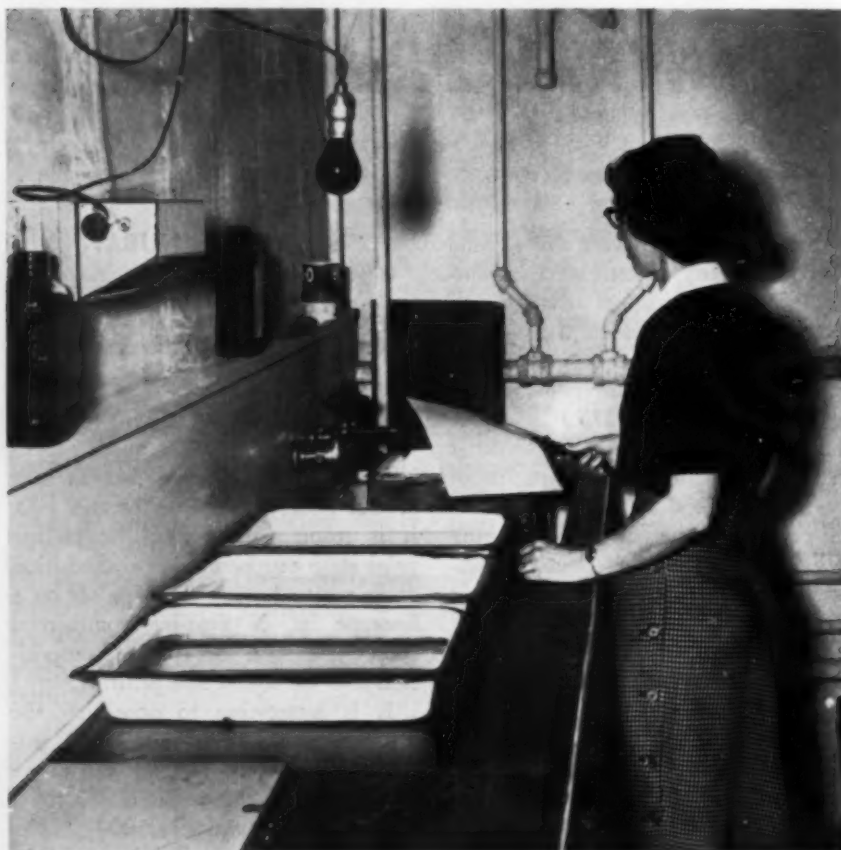
typesetting machine so, in turn, all type is set by hand. To avoid investing extensively in type and to save several hours of time in certain jobs, it is recommended that the college print shop purchase trade composition (this means having the type set on a linotype at a near-by commercial shop) and then incorporate composition into the layout and printing.

It is interesting to note that the printing demands of our 1200 students, 200 faculty, and administrative members equal the demands of a town or city of approximately 5000 people. If a college is interested in establish-





Above: One of the duties of a full-time employee who works under the college printer is to operate a photostat machine similar to the one above. Below: After being copied on the machine, photostats are processed in an adjacent darkroom.



ing its own print shop, one of the first steps to take is to acquire the services of a competent printer. He not only should be qualified to run a one-man shop but also should possess a good education, pleasant personality, and the ability to handle faculty and administrative members, who often think that their job is the most important one on the campus and should, in turn, be printed within a period of 24 hours. In addition, such a printer should have a definite versatility that will provide him with the ability to supervise other adjuncts to his shop.

A well lighted area, 35 by 50 feet, has been allocated to our print shop in the basement of the student union building. Half of this space is used for printing and the file of engravings which also is centralized in the print shop; the remainder is used for mailing and photostating purposes.

A full-time employee works under the college printer. It is her duty to handle the mailing of all college publications and keep the mailing list of nearly 100,000 names up to date. In addition, she operates a photostat machine which is located in the shop next to a small darkroom that provides facilities for the processing of photostats. Student help serves as a source of much needed part-time labor during the rush mailing seasons.

The publications and publicity department coordinates the operations of its print shop and its secretarial section, which handles all the college mimeographing in a convenient central location. If a member of the college family seeks to have something printed and needs only a couple of hundred copies, the print shop turns it over to the secretarial section for duplicating purposes. In turn, the secretarial section will forward to the shop for printing any material that might run into 500 or 600 copies. This coordination assures the most economical use of duplicating material. Faculty members and administrative offices are billed directly for printing and mimeographing charges.

Three full-time persons are employed in the secretarial section, which does a volume business of approximately \$6000 a year. This amount represents several hundred various small jobs, from examinations, minutes of various meetings, and examination schedules to form letters. This section also compiles, mimeographs and distributes an information sheet called the *Daily Notice* that contains all the

daily announcements pertinent to student and faculty members. It has a distribution list of nearly 100 copies and is most popular on the campus. It eliminates the long drawn out process of reading notices during daily chapel and offers an opportunity for the posting of more detailed information.

In order to operate an efficient stencil duplicating center for a small college, it is essential to have certain items of necessary equipment. Because of the large amount of stencil work, an electric typewriter is a "must." Good duplicating results and less fatigue to the operator are two major rewards acquired by the use of an electric typewriter, which will cut stencils in a way that is impossible to do with a regular typewriter.

Another "must" item is a tilted mimeoscope used in the proofreading of stencils. A T-square can be attached to the "scope," making it possible for it to be used for several purposes, including the drawing of lines and shadow lettering.

An electrically-driven duplicating machine is most important. Although the initial cost of such a machine may seem high, it will more than pay for itself in the long run in efficiency and savings in upkeep.

Stencils that may have a future use are filed away in a permanent file and are used over and over. Often, the person in specifying the number of copies needed miscalculates on the number; with the stencil on file, it is a simple matter to place it on the machine and run off the needed copies. Certain stencils are used by faculty members in their respective courses year after year.

Fast drying ink is used in all such duplicating work at Middlebury, as it allows for more efficient operations with stencils and makes for a much cleaner process in their filing.

The purpose of the service organizations of our publications and publicity department is not to realize a profit, although an unwritten saving for the college is realized annually. In the operating of printing, stencil duplicating, and photostating services, enough of an income should be made to cover all costs, including material, labor and overhead, such as rent, electricity, heat and depreciation on machinery. Unless each of these items is taken into account, a false picture will be given on the income value of these services.



Above: The mimeoscope is another convenience in a duplicating service. Below: An electric powered duplicating machine is kept in constant operation. Often, stencils cut by various departments on the campus are brought here for processing.



# TAX LEGISLATION BY ADMINISTRATIVE FIAT



## Part I

**T. E. BLACKWELL**

Treasurer, Washington University  
St. Louis

LEGAL SCHOLARS IN RECENT YEARS have viewed, with increasing concern, the expansion and development of what is termed "administrative law." The average layman assumes that he is governed by laws enacted by Congress and by other legislative bodies. As a matter of fact, we are governed by regulations issued by governmental officials, without the restraining influence of discussion and debate inherent in the legislative and the judicial processes.

This invasion of administrative control of our daily life was challenged in England in 1929 by the publication of "The New Despotism" by Gordon Hewett, lord chief justice (1922-1940). He spoke of the trend as one toward "administrative lawlessness." For him, the new despotism was the growth of bureaucracy and of its power to legislate by fiat. The rebellion in this country was brought to a head in 1940 by the passage of the Logan-Walter Act by both houses of Congress. This legislation attempted to curb administrative authority by an extension of the scope of judicial review of administrative regulations. However, President Roosevelt vetoed the measure. The Administrative Procedures Act of 1946 was a step in the right direction but the problem is real and one that will continue to press for a solution.

### NOT TAXABLE INCOME

The vast bulk of the law of taxation is administrative rather than legislative in origin. In the July 1949 article of this series, "The Tax Status of Faculty Room and Board," the statement was made that "if it is reasonably necessary for an employee to live on campus in order to perform his duties, the value of his room and board

under such circumstances does not constitute taxable income to the recipient." According to regulations in effect at that time and court decisions to date, if the "living quarters are furnished to employes for the convenience of the employer," the cash value thereof does not constitute taxable income to the employee.

Soon after this article appeared in print, we received a letter from the controller of a state university enclosing a copy of a ruling he had received from the local office of the Bureau of Internal Revenue, in which it was held that the cash value of room and board furnished to residence hall employes responsible for the supervision of kitchens, dining rooms, and house-keeping of the rooming division of the hall must "be treated as additional compensation to them for the purpose of determining the amount of wages subject to withholding."

The deputy commissioner did not question the fact that these employes were required to live in the residence hall in order to perform their duties; that they were on call 24 hours a day; that they were not permitted to be absent from the building overnight without arranging for a substitute. There would seem to be no question that this situation should meet the test of "the convenience of the employer." Despite this clear finding of fact, the deputy commissioner ruled against the employes on the grounds that "the terms of the employment contract entered into between the university and each employe of the residence hall staff imposes a definite obligation on the employer to furnish meals and lodging to the employe."

This ruling would seem to overlook the fact that the conditions and terms of employment are almost universally

reduced either to oral or to written contractual form. If the well established test of the "convenience of the employer" may be disregarded merely because the employer and the employee agree in advance as to the essential terms of employment, it has been, in effect, overruled. No realist would question the fact that room and board, even if furnished "for the convenience of the employer," are compensatory in character. Nonetheless, such compensation has been tax free for many years in accordance with a long line of judicial precedent. To change its status by a unilateral ruling, without the usual safeguards of a public hearing, arguments and debate, is, in essence, government by fiat.

### TYPICAL CASE

An informal ruling from the local office of the Internal Revenue Service in Chicago, published in the March 1950 issue of COLLEGE AND UNIVERSITY BUSINESS, is typical of the unrealistic approach to actual working conditions:

"When an employe is hired for work during the meal hour, it is expected that he will be occupied during the entire period for which hired and will partake of his own meal either before or after his duties have been performed. Therefore, since he could obtain his meals elsewhere without material interference with his duties, his work is not of a nature that requires him to accept meals from his employer."

This informal decision of the Chicago office has been confirmed by a formal ruling\* issued by the Bureau of Internal Revenue dated Feb. 15, 1950. It reads, in part: "The convenience of the employer rule" is simply an administrative test to be applied only in cases in which the compensatory character of such benefits is not otherwise determinable. It follows that the rule should not be applied in any case in which it is evident from the other circumstances involved that the receipt of quarters or meals by the employe represents compensation for service rendered."

Just what this language means and just how far the bureau intends to extend it will not be known until after it has been applied in specific situations. Until challenged by some taxpayers in the courts, it is the law of the land.

\*IT:EIM: Mim. 6472 (Prentice-Hall Federal Tax Service, Par. 76 227).



## 1

At center of **BOSTON UNIVERSITY** campus,  
*chapel symbolizes centrality of religion in educational program*

**GEORGE A. HASTINGS**

New York City

THE LOCATION OF THE NEW \$900,000 chapel in the center of Boston University's campus is intended to be a symbol of the centrality of religion in any rightly ordered program of education, according to Daniel L. Marsh, president of the university. The main axis of the chapel runs north and south, flanked on the east by the college of liberal arts and on the west by the school of theology. To the north will rise the University Tower, a replica of the old "Boston Stump" of St. Botolph's Church, Boston, England, which will house the university administrative offices.

Designed by Cram and Ferguson, architect-engineers of Boston, the nave floor is devoted to a chapel with a balcony over the narthex. The lower level, partially below ground, contains a small meditation chapel accommodating 90 persons. In addition, there are several rooms for seminar and choir practice, as well as mechanical and utility rooms on this lower level.

The structure, erected by the Turner Construction Company, is approximately 100 by 50 feet, and 65 feet from basement floor to the roof peak. Its total content is 365,635 cubic feet.

The chapel is modified Gothic in style to harmonize with the simple, clean, but still Gothic feeling of the two buildings that flank it.

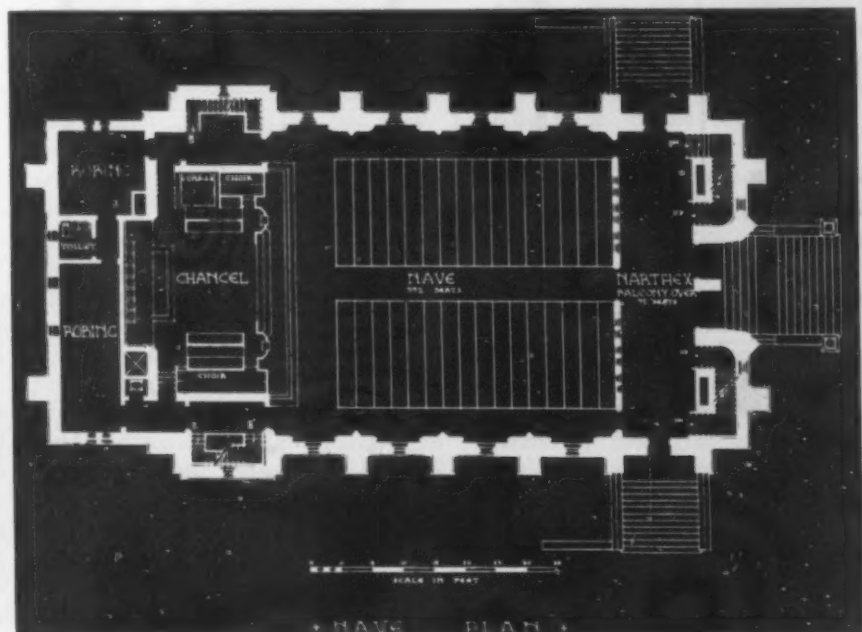
Except for steel and concrete framing to carry the basement, nave and gallery floors, the construction is of solid brick and stone, the heavy walls being functional as well as decorative elements of the structure. The nave has been finished with a stone dado, stone colonettes, and acoustical plaster. The roof is carried on open wood trusses. Stone was used for the walls in the narthex, and both the rear of the chancel and the narthex have wood paneled, vaulted ceilings. The gallery rail, organ screens and reredos are of carved wood.

A new 32 stop organ was installed in the main chapel, while the medita-

tion chapel on the floor below has an electric organ.

Stained glass windows made by the late Charles J. Connick were removed from the university's Robinson Chapel on Beacon Hill and placed in the new building. Stained glass was used in the lower nave windows and cathedral glass in the basement windows. Three small stained glass windows in the narthex of Robinson Chapel were transferred to the chancel of the meditation chapel.

The upper nave windows of the new chapel are stained glass. Seven of them were moved from Robinson Chapel; the other three and the rose window in the north wall over the chancel are new. The west window in the gallery of Robinson Chapel was removed and used for the main part of the south window in the new structure. Under eight of these windows, four on each side, are aisle windows, each one containing a rectangular central panel, with an appropriate symbol beneath it.





## 2 Dominates grounds at

# PENNSYLVANIA COLLEGE

HANNA GUNDERMAN

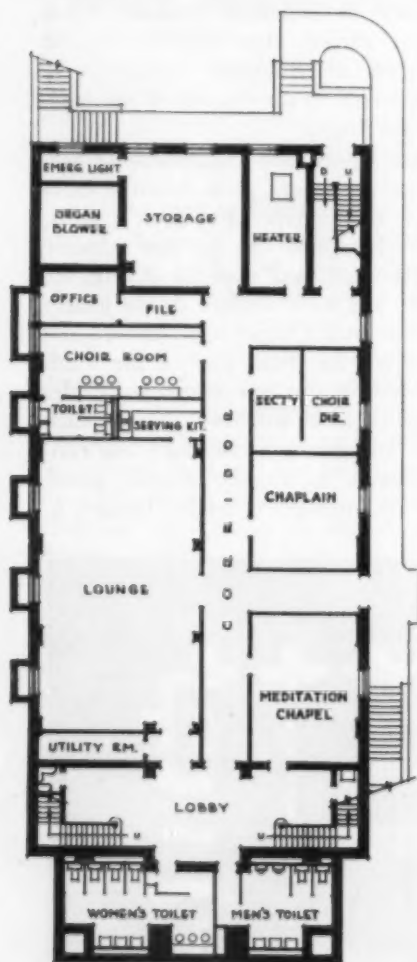
Bursar, Pennsylvania College for Women

THE MOST RECENT ADDITION TO Pennsylvania College for Women's expanding facilities, a chapel, was dedicated in ceremonies at the Pittsburgh college on May 6.

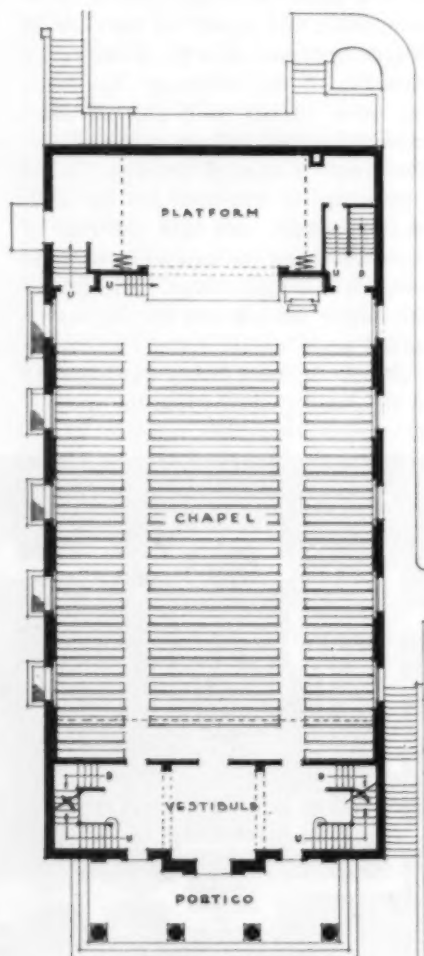
Several years ago college authorities and professional site planners studied the campus terrain and determined the best locations for planned new buildings. To take advantage of the beautiful natural contours of the campus, the chapel was located on the side of one of the hills dominating the col-

lege grounds. Because of the hillside location, it was necessary to create a forecourt by constructing a concrete and stone retaining wall.

The chapel is the first building to be seen as visitors and students approach the campus. Built of red brick, its Georgian design corresponds with the adjacent library and science hall. The entrance portico is of limestone with limestone supporting columns. The pediment displays the college seal and a tower and spire rise above the entranceway. Loud-speakers in the tower carry the music of the electric



GROUND FLOOR PLAN



FIRST FLOOR PLAN



BALCONY FLOOR PLAN



chimes over the campus and the surrounding neighborhood.

The interior presents a pleasing effect. The walls and ceiling of the main chapel are painted dove gray with the draperies harmonizing in shade. The chapel floor is covered with gray asphalt tile with red carpeting in the aisles; the main entrance is floored with terrazzo. Lights are recessed in the curved ceiling. The pews and chancel furniture are painted white with mahogany trim to correspond with the woodwork.

A four-manual organ, costing \$54,000, was especially designed so that the electronic bells which sound from the tower may be played from the organ console as well as from a separate keyboard.

Since the building also serves as an auditorium for concerts and lectures, a unique arrangement was devised to make it possible to use it for these activities. The organ chambers are located at the sides of the chancels, about 10 feet above the platform level. Walls of the platform are paneled with the paneling continuing in the form of folding doors at the sides, under the organ chambers. These folding doors may be moved back to provide more platform space when needed. Pews for the choir will be stored in a room under the door when the use of the large platform is desired.

The auditorium seats 675 on the first floor and a balcony accommodates 150. A projection booth is located on the balcony.

Iron stairways on either side of the vestibule lead to the ground floor. Here an air conditioned lounge for group meetings and social gatherings, a kitchenette, a meditation chapel with a seating capacity of 50, offices for chaplain and choir director, robing rooms for the choir, and restrooms are located.

Although the decorative motif of the ground floor is traditional, the color schemes are heightened by the use of modern decorator colors. The lounge is walled with fabric painted Braque gray, which serves as an excellent background for the paintings exhibited in this room. The furniture is dark mahogany with chartreuse and Chinese red predominating in the upholstery. The outstanding colors in the chaplain's office, which is attractively furnished with leather covered chairs and divan, are bronze and dark

red; walls of the other rooms are painted light blue.

The new chapel, which completes the educational quadrangle of college buildings, was made possible through

the generous gifts of anonymous donors. It cost approximately \$360,000; organ, furniture and equipment added \$115,000. Ingham, Boyd and Pratt of Pittsburgh are the college architects.

# 3

## Solves three problems at UNION

**W. M. HEARN**

Director of Public Relations, Union College  
Barbourville, Ky.

THE COMPLETION OF THE CHAPEL-fine arts building at Union College, Barbourville, Ky., last September completely solved three problems—that of seating the entire student body in one group, of providing a suitable place for worship, and of housing an expanding fine arts division.

Really two buildings in one, the structure consists of a chapel large enough to seat 700 persons and a two-story fine arts section containing 11 piano practice rooms, two studios, a concert hall with stage, a radio control room, an instrumental room, a small library, an art room with laboratory equipment, a large classroom, division administrative offices, and a projector booth. Since Union does not aspire to enroll many more than 500 students, the capacity of 700 will be adequate for future enrollments. The present student body numbers 454.

Colonial in architecture, the building is 160 feet long by 100 feet wide; the fine arts section is 100 feet by 65 feet. The structure has brick walls, with a dome reaching 100 feet above the ground. Roof trusses and purlins are of steel, and the roof is of slate, except in the rear portion of the building, where it is concrete. The window frames and doors are of wood, the door frames of metal, and the interior partitions of plastered tile.

An unusual feature of the chapel proper is the placement of the pipe organ chamber. Built immediately behind the reredos in the chancel, the swell and choir chambers also open into the smaller concert hall of the fine arts section of the building. The main chamber of the \$12,500 pipe organ is located in the sanctuary, but through electrically controlled shutters



the music can be heard in either or both the auditorium areas.

The sanctuary has a divided chancel with the choir on either side of the altar immediately below the reredos and organ chambers.

The stage in the concert hall is equipped with a remote control lighting system. Directly off-stage is the main radio control room, center of a network of microphone lines leading to the sanctuary and to each of the music studios located in the building.

An ivory and mahogany color scheme prevails in the interior. More than 1150 yards of acoustical plaster was used in the ceiling, which is constructed of metal laths and plaster; the flooring is concrete slabs covered with asphalt tile, terrazzo and tile. The building is heated by steam.

The structure, exclusive of land, cost approximately \$350,000, which included architect's fee and equipment.



# 4 GEORGETOWN gains

*classroom and studio space, too*

TWO FEATURES PROVIDE THE JOHN L. Hill Chapel at Georgetown College, the senior Baptist college of the state of Kentucky, with its utilitarian quality. First, the chapel auditorium itself has been raised sufficiently above ground level to allow for a basement containing six large classrooms. The floor of the basement, however, is only 4 feet below the surface of the ground, which permits normal window light and ventilation.

The second utilitarian feature of the chapel is the wing of additional rooms behind the stage. On four floor levels are 12 rooms, four small rooms on each of the first two levels and two standard sized classrooms on the two upper levels. Two of the smaller

**PHILIP S. COX**  
Director of Publicity  
Georgetown College, Georgetown, Ky.

rooms on the auditorium floor are the offices of Samuel S. Hill, president of Georgetown. The remaining six small rooms on the first two floors are used as robing rooms for the choir, studios for voice and piano instruction, and practice. The studios have been completely soundproofed and are fitted out with two pianos.

A high ceilinged basement room has been soundproofed and adapted for classes in conducting. The seats are in tiers, an arrangement made possible because the floor of the auditorium, which is the ceiling of this



particular classroom, is on an incline.

In order that the students may have ready access to the classrooms without having to pass through the auditorium, two entrances on each side have been provided. The front entrances open onto stairways leading up to the foyer and down to the basement. The back entrances open onto the hallway which surrounds the stage and leads to the studios and offices and to the back central stairway.

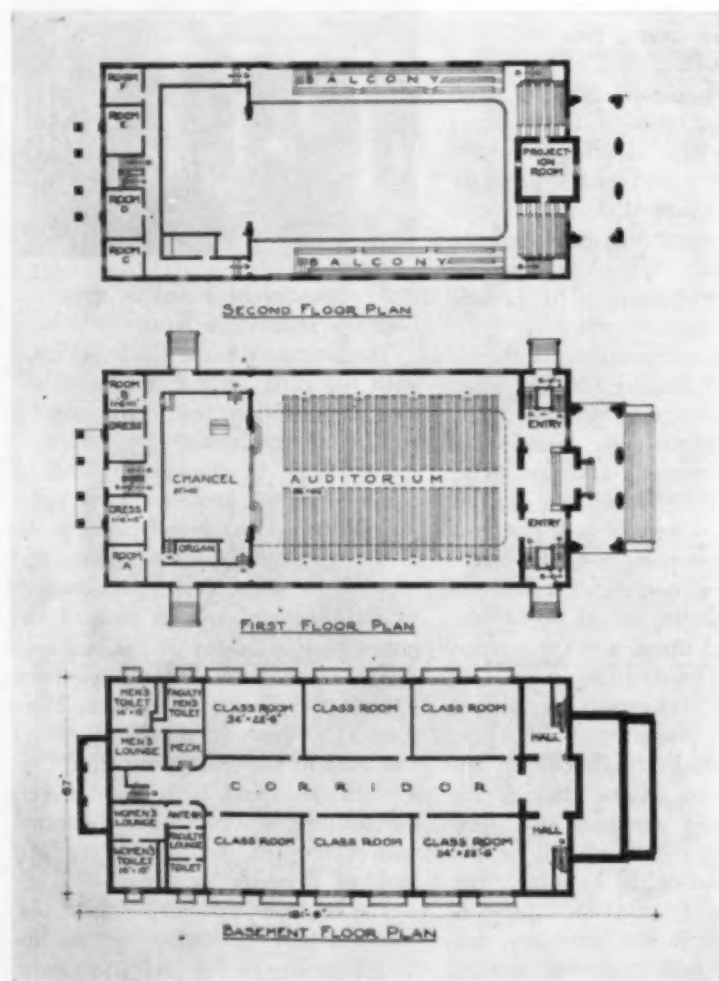
The beauty and worshipful atmosphere of the chapel itself have been accomplished through a careful choice of colors and decorative appointments. The walls of the chapel are eggshell trimmed with Williamsburg blue. Individual cushioned seats are covered in maroon mohair. Full-length maroon velveteen stage curtains match the seats. The total seating capacity is 1064.

There are five stained glass windows on each side, the central ones of which have picture panels.

In addition to speakers' chairs, pulpit and removable front railing, the large platform is equipped with tiered choir seats, a concert grand piano, and a pipe organ. The acoustical qualities of the chapel are so good that the public address system, installed in the pulpit, is rarely used.

Architectural style of the chapel is Colonial. Its spire extends 65 feet above the roof.

The chapel cost \$400,000, all donated by friends and alumni. The fairly high cost may be accounted for by the fact that in no case was material of inferior quality permitted in the construction.





## *Rice Institute attains real functionalism in its* **LIBRARY**

**WILLIAM S. DIX**

Librarian, the Rice Institute  
Houston, Tex.

FIFTY YEARS AGO IT WAS NORMAL practice to make the exterior of a library look as much like the Taj Mahal or the Cathedral at Chartres as the building fund would permit. The interior that resulted often looked like a cross between the waiting room of Grand Central Station and the mosque of Sancta Sofia. A great many architects seem to have forgotten that the structures they were creating were libraries, meant to house books, to provide working space for the library staff, and to encourage other people to read books; instead they gleefully set out to make their buildings a hodgepodge of all the architectural relics they remembered from their student days.

The recent trend in library planning has been all in the opposite direction. The vigorous probing and the enthusiastic discussion of such university librarians as Julian Boyd, Charles David, John Burchard, and Ralph Ellsworth, together with the imaginative cooperation of manufacturers of

library equipment, such as Angus MacDonald and Donald Bean, have made everyone interested in libraries aware of the sins of the past. The trend now is toward modular planning, and sometimes modular planning is pushed to the point where the library resembles nothing so much as a factory. Let me say here that I do not refer to such beautifully clean modern buildings as that at Washington State, which is factory-like only to those die-hards who insist that every college building must be neo-Gothic.

### **STOREHOUSE OF WISDOM**

But it is certainly possible to push a surface functionalism too far. A library is not merely a warehouse for books. Along with the exciting new developments of library architecture have come new conceptions of internal organization of the university library. More and more books are

coming out of the dark stack areas and the old artificial barriers of books and readers imposed by the closed stack system are breaking down. It is being recognized that one of the real functions of a library is to attract readers by providing physically comfortable and esthetically satisfying rooms where the faculty and students of a university may take part in such varied intellectual and esthetic activities as reading, listening to music, looking at pictures, and participating in group discussions. The library remains the storehouse of the wisdom of the past, but it is also the focal point of present creativity in the arts, in literature, in scientific research, and in citizenship.

All of these factors were considered when concrete planning for the new Rice Institute library building was begun during the recent war. John Burchard, then director of libraries at M.I.T., was engaged to make a survey of the institute's library building needs, and this survey formed a basis for



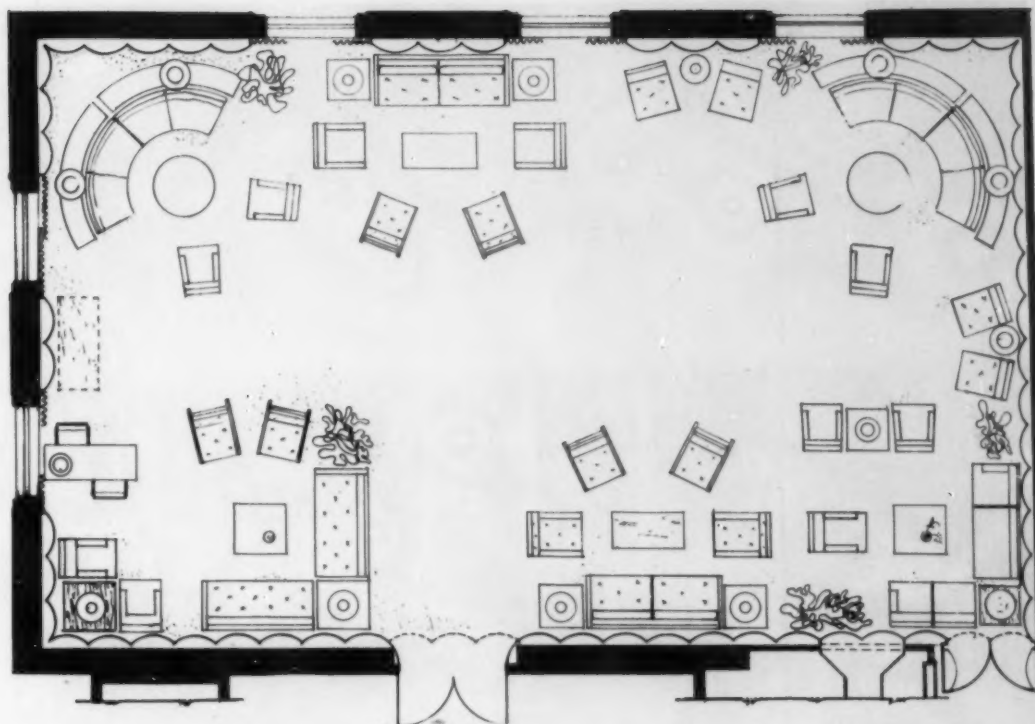
Above: The lecture lounge offers accommodations for informal group meetings in unusual surroundings.

Below: The same lounge converted into a lecture hall with facilities for the projection of films.





Diagram prepared by the interior decorating firm shows the furniture arrangement when room is being used as a lounge.



further planning and discussion. Participation in the cooperative committee on library building plans brought to architects John Staub, John Thomas Rather, and William Ward Watkin the most progressive ideas of administrators, librarians and architects from other institutions. As a result, Rice's new Fondren Library, dedicated Nov. 4, 1949, represents a real functionalism, a representation of not one but all of the functions of a library on a university campus.

The building as a whole has been described and discussed briefly in the *Library Journal* for December 15. The purpose of this article is to consider the relation of two rooms, the lecture lounge and the music and fine arts room, to the total function of the university library. Can one justify the provision of such relatively luxurious rooms in a library?

These two rooms are on the second floor at either end of an exhibit lounge, where books and pictures are constantly on display. The whole area, while connected immediately with the more conventional book areas of the library, can be shut off and used when other parts of the library are closed to the public. Both rooms open onto outdoor terraces, which can be used for reading during pleasant weather.

It was decided to utilize the services of a professional decorator for the lecture lounge and the music and fine arts room. A New York decorator

made two trips to Houston to plan the decoration and to supervise its installation, working out the decorating plan through consultation with the architects and the librarian.

The lecture lounge was designed to meet a campus need for a room for small meetings and lectures. It was felt that such a room should be as unlike a classroom as possible, its function being to encourage such meetings and to draw them into the library. It was not to be used for social functions but to lend to scholarly meetings the comfort and informality of a club lounge.

#### LOUNGE AND LECTURE HALL

The room that finally evolved is 54 by 34 feet. Set up as a lounge, it seats 50 persons; the addition of stackable aluminum chairs converts it into a lecture hall seating approximately 200. These chairs and other movable pieces of equipment used in converting the room to a lecture hall are stored conveniently in an adjoining small room. Acoustical considerations dictated the heavy chenille wall-to-wall carpet, the molded plaster ceiling, and the polycylindrical walls of bent walnut plywood. The result is a room that is acoustically alive but without echoes. Draw curtains of heavy hand-blocked linen, lined with black, darken the room conveniently for the projection of films. Through apertures high in one wall films may be pro-

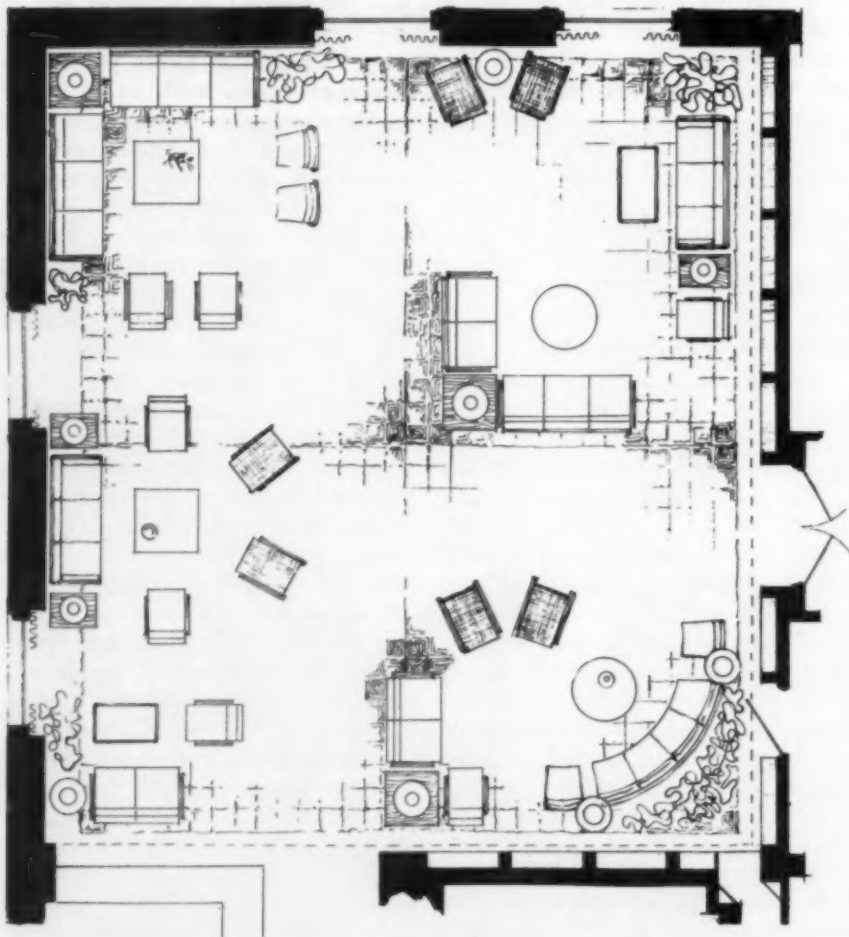
jected from a fireproof booth to a portable screen. An excellent sound system with facilities for the amplification of transcripts and radio broadcasts is being installed; the speaker may be plugged in at either end of the room and the control equipment may be placed in either position or in the projection booth.

The lounge furniture is modern without being obtrusively modernistic. Low coffee tables with ash trays and many pottery table lamps help create an informal atmosphere. A writing desk at one end of the room becomes a speaker's stand when the room is used for lectures. Colors in the room are varied but harmonious. The foundation color is brown, lightened by wood tones and natural linens, and refreshed by olive and greenish gold.

The music and fine arts room was designed to meet other needs. The Rice Institute offers courses in neither music nor art, except in connection with its architecture curriculum. The music and fine arts room attempts to fill this gap by providing a place where students may look at pictures, listen to records, and browse through books in the fine arts. Two walls of the 38 by 34 foot room are covered with built-in bookshelves, and there are also built-in portfolio cases for shelving prints. Phonograph records are shelved behind a counter, where an attendant is on duty when the room is open. Six soundproof listen-



Above: In the music and fine arts room students may browse among the books and pictures shelved there.  
Below: Diagram of music and fine arts lounge showing arrangements of furniture, most of which is bamboo.



ing booths adjoin, each equipped with a high-fidelity record player and chairs for two students. The room itself is soundproof, and upon occasion records may be played for larger informal groups.

Since this room is not scheduled for regular meetings, the whole feeling is more casual than is that of the lecture lounge. The walls above a high oak-paneled wainscoting are covered with grass cloth and most of the furniture is bamboo, the loose cushions of which are covered with brightly colored linen prints. The design of some of these cushions is carried out in the hand-blocked linen draw curtains at the long windows. Floors are of pressed cork, partially covered by loose grass-fiber rugs.

After several months of use, it seems quite clear to me that such rooms as these justify themselves. The lecture lounge is scheduled daily for meetings, both by campus groups and from time to time by outside professional and scholarly organizations. It is unnecessary to point out here the public relations value of inviting such organizations as the Texas Library Association and the Texas Academy of Science to meet in university buildings.

Most important of all from a librarian's point of view, students are brought into the library and have books called to their attention. The initiation on the campus of various cultural activities, such as a film society and a series of record concerts, can be traced directly to the provision of this room.

The music and fine arts room is in constant use for 11 hours a day, the current average of student listening hours amounting to the surprising total of 1500 per month. An important educational consideration is that all this activity is entirely voluntary. In other words, there seems to be on this campus at least a direct relation between the providing of rooms that are esthetically satisfying and the success of the broad program of the library.

Because practically the same general principle has been carried out in the design of the whole building, the library in a short time has become the undoubted center of campus activity. Faculty interest in book selection has multiplied, the circulation of books to students has more than doubled, and the library's gift list has been augmented monthly by new outside donors.



Above: Walls above an oak-paneled wainscoting are covered with grass cloth. Below: The design of the back cushions is carried out in linen draw curtains.





# SATISFACTORY LIGHTING

*Staff and students in electrical engineering building report excellent seeing conditions*

**HARRY W. HORN**

Associate Professor  
Department of Electrical Engineering  
University of Illinois



Indirectly lighted dynamo laboratory at Illinois. There is the equivalent of 111 four-lamp fine line fluorescent luminaires in this installation.

THE PLANNING OF THE LIGHTING installation for the electrical engineering building at the University of Illinois (now in its second year of active service) presented the designer<sup>1</sup> with numerous problems in illumination applications. The building, with a total floor space of approximately 75,000 square feet, contains classroom, laboratory, office and maintenance shop facilities to serve a thousand-odd students in the electrical engineering department and to supply the needs of perhaps an additional thousand students from other engineering departments. The decisions to be made with

<sup>1</sup>The lighting design for the building was the responsibility of Prof. J. O. Kraehenbuehl of the electrical engineering department.

regard to adequate illumination in the building were both general and specialized in nature.

Currently, in contemplating lighting work it is necessary to make careful studies of the particular application insofar as a choice of incandescent or fluorescent sources for lighting equipment is concerned. Despite the rather common conception of the public that fluorescent lighting has completely eclipsed incandescent forms, the experienced illuminating engineer is quite aware that factors of illumination performance and economy vary widely under different conditions of application. The relative economy of the two systems in this case is of major interest since it was possible to achieve comparable results

in lighting quality with either system. When the analyses of annual lighting expenses are made, the following cost study should include: (1) capital expense, (2) total energy cost, (3) lamp replacement expense, (4) cleaning costs, and (5) repair charges. In a cost comparison of alternative systems it is only necessary to compare those elements of cost which differ appreciably for the types compared. In planning, it was concluded that for general classroom, laboratory and office lighting the high quality of indirect illumination could be achieved equally well with either incandescent fixtures or fluorescent fixtures, both of which were commercially available.



This picture shows the fluorescent lighting in the long main corridor.

Proceeding to an examination of the economics, the engineers were guided by the following general facts with which the profession is becoming acquainted through experience in school lighting but which are too frequently overlooked by those on the outside. It is for this reason that these limiting conditions are enumerated here. They do not represent exact figures resulting from the actual estimate work for the electrical engineering building but serve to emphasize the need for a careful study of costs before judgment is passed on any lighting system.

Inherently, conservative first-cost comparisons between indirect fluorescent and incandescent equipment (installed in new construction) of equivalent quality and utilization of

light indicate two to three times the investment required for fluorescent lighting over that necessary for incandescent lighting. Consequently, fluorescent equipment has an advantage over filament installations on an overall annual cost basis only when the annual energy charge, equipment maintenance, and lamp renewal costs are materially below those for the incandescent alternative.

The energy cost is an important controlling factor in the annual operating charges and is dependent upon the energy rate and the total hours' use of the equipment. For an equal maintained level and quality of illumination, the incandescent equipment

estimated accurately from price schedules and mortality data, readily accessible. However, the cost of labor required to replace the lamps at the socket cannot be judged unless such renewals are handled by physical plant maintenance crews assigned to the task.

Although fluorescent lamp life is much greater than that of incandescent lamps, the actual number of fluorescent lamps per room may be four to six times that of an analogous filament system, in which case only slight differences in total annual renewal costs are likely to be found because of the increased labor item on the fluorescent side of the ledger.

lie chiefly in the fixed charges and energy expense. At the University of Illinois, energy is provided by the university's own generating station at an extremely low cost per kilowatt-hour, possible through the requirements for heating the large number of buildings with steam. In most circumstances, the adoption of incandescent lighting in the majority of rooms was advisable because the annual savings in energy cost for fluorescent installations at the low energy rate did not approach the much greater savings in capital expense effected by the installation of incandescent lighting. In institutions in which energy is either generated or purchased at



A corner of the reception room in the office of the department of electrical engineering at the University of Illinois.



Classroom in the electrical engineering building which shows typical lighting installation.

will operate at from two to two and one-half times the power consumption of the fluorescent installation. Assuming a 750 to 1000 hour average annual use of classroom lighting,<sup>2</sup> the energy cost is readily obtained from these figures combined with the average energy rate. A high energy rate results in greater savings afforded by the fluorescent system and may well overcome the economic disadvantage exhibited in the fixed charge component for a given write-off period.

A significant operating charge is that of lamp replacement. The purchasing cost of renewal lamps can be

Somewhat the same results can be expected in comparing annual fixture cleaning costs. While luminaires of either type should be cleaned at approximately the same intervals, the cleaning cost per unit is greater for fluorescent types, and more fixtures per room are usually required to accomplish the same result.<sup>3</sup>

Ballast replacement for all kinds of fluorescent lamps and starter replacements that have no parallel in incandescent operation will increase operating costs slightly for fluorescent systems. Determining factors, therefore,

appreciably higher rates, the reverse situation may well result.

Upon occasion a situation may arise in which, although combined heating and electrical generation and distribution afford a low energy cost, the existing electrical supply or distribution capacity would not permit the addition of the load required by incandescent lighting. If money is not available for additional capacity, the fluorescent system would, of course, be indicated for the new construction. The same problem is likewise met in relighting old buildings where appropriations for rewiring are not attainable.

The lighting design for our electrical engineering building covered applications of classroom, office, labora-

<sup>2</sup>The usual estimate for public school classrooms, which probably represents a greater use factor than that experienced in most university classrooms.

<sup>3</sup>The number of fluorescent fixtures depends upon the unit selected. Two or four 40 watt preheat lamps and two or four 8 foot fine line lamps per fixture are common.

tory, shop and corridor illumination. Consistent with the economic reasons previously discussed, the designers utilized incandescent sources whenever feasible.

The general architectural and decorative features of the building are relatively uniform. The room ceilings are of finish white plaster with exposed beams and ducts painted white. The floors are a dark green mottled asphalt tile of low reflectance, the choice having been based on durability rather than optimum reflectance for utilization of light. Trim and walls are a light tint of green of 55 per cent reflectance.

Here attention is called to the use of concrete blocks for finish walls. The blocks have a rough finish which, when spray painted, present a pleasant textured surface, far less cold and monotonous than finish plaster treated with an identical paint. Students, faculty and visitors have commented many times on this particularly attractive feature.

Classroom walls are broken with darker green writing boards (20 per cent reflectance). Corridor treatment is similar except for the ceilings of patterned acoustical tile. Control of daylight in all cases is afforded by ivory venetian blinds.

#### CONSISTENT WITH STANDARDS

It is not the purpose of this presentation to discuss the details of the American Standard Practice for School Lighting,<sup>4</sup> which effectively integrates the best engineering practice in the field of classroom illumination in its recommendations. The illuminating engineers will find the lighting design executed in the building consistent with the standards recommended, with particular attention having been paid to the quality of the visual environment as well as ample provision having been made for appropriate levels of quantity.

A comfortable atmosphere exists as a result of the decorative treatment just described and through exercise of judgment in the selection of light sources and their layout. Notably absent are examples of glare and excessive brightness contrasts. The use of indirect lighting assures uniformly dis-

tributed light on the work surfaces free from disturbing shadows.

The successful achievement in classrooms of the results reported here has been effected by the room surface treatment and by the use of luminous indirect fixtures. Adequate levels of 35 to 40 foot-candles<sup>5</sup> are maintained with 500 watt incandescent lamps in each fixture spaced on an average of 7 by 9 foot centers suspended 26 inches below 13 foot ceilings. At least three switched circuits are provided for flexible control in supplementing



natural lighting for daytime use as required. Asymmetric downlights give some 30 foot-candles on the front writing boards. The problem of radiant heat from filament lamps in classrooms and offices is not applicable since only minor use of the lighting system is made during the summer seasons when the natural lighting seldom needs material help from artificial lighting.

The same plastic luminaires employed in the classrooms are mounted on 6 by 7 foot spacings in the offices, which accommodate two to four occupants who have an average of 45 comfortable foot-candles under which to work, exclusive of daylight. The lighting is of such quality and quantity that few staff members find local lighting on the desks necessary. Convenient switching permits flexible adjustments of required lighting patterns.

In two instances fluorescent equipment supplies illumination in offices. The reception office of the department received more formal decorative treatment and has been provided with a lighting system likewise more formal in tone. In effect, the luminaire is a single unit—a continuous row of indirect fluorescent fixtures with luminous side panels forms a rectangle paralleling the walls of the room in a perimeter effect. Since the lighting is an element of the room composition, the result is more pleasing. Some 35

<sup>5</sup>Values exclude daylight components.

foot-candles of indirect lighting supply high quality lighting.

The office of the head of the department was more formally designed, and here one finds luminous indirect fluorescent lighting from parallel units arranged in continuous rows. The luminaires have a pleasing and simple design and render characteristic results of quality and quantity.

Ground and top floor corridors are equipped with prismatic glass fixtures which effectively distribute light from incandescent lamps along the length of the halls and restrict it across the width. The main floor corridor is illuminated by a series of louvered-bottom fluorescent fixtures (two 40 watt lamps are luminaire) ceiling mounted; they are spaced at intervals of 16 feet to give adequate illumination. The fluorescent luminaires are more appropriate in styling in this area, which is used by the general public as well as by visitors to the building.

The department has space utilized by shops in which considerable repair and construction are carried on. Industrial reflectors with opal glass diffusers furnish excellent lighting for precise machine and hand work.

#### WINDOWLESS LABORATORY

The focal point from the lighting standpoint is the dynamo laboratory. The room is completely without natural lighting and is approximately 157 by 83 feet with a ceiling height of 13.5 feet. Reference to illustrations on pages 42 and 43 emphasizes the network of large beams, ventilating ducts and piping which are suspended below an acoustical ceiling. The presence of a goodly number of columns contributes to the complex lighting problem of achieving high quality illumination required by the visual task without too great a departure from ideal design.

The principal visual task encountered by the student is that of making precision readings of electrical instruments. The meter faces are normally in a horizontal plane, and the observer is required to align the instrument pointer with its image as produced in a mirror strip immediately adjacent to a black scale printed on a contrasting white background. It is highly important that a uniformly bright ceiling surface be reflected to render a glare-free contrast with the needle image. Indirect luminaires produce satisfactory uniformity of ceiling

<sup>4</sup>Sponsored by the Illuminating Engineering Society and the American Institute of Architects and approved by the American Standards Association, 1948. Copies may be obtained from the Illuminating Engineering Society, 31 Madison Ave., New York 10, N.Y., at a nominal cost.



brightness when properly spaced. Further, the bottom of the fixtures must be comparable in brightness to the ceiling to preserve the desired background for reflections for accuracy in reading the meters. The task is sufficiently severe to require particular attention and to demand an illumination level in excess of usual classroom requirements.

Other seeing tasks adding to the need for highest quality illumination include working with rotating machinery, circuit wiring on vertical jack panels with plug connectors, and the recording of data and calculations. Fortunately, adequate lighting for instrument reading provides satisfactory visual conditions for these applications.

The careful choice of appropriate lighting is reflected in the selection of luminous indirect fluorescent luminaires, maintaining satisfactory ceiling brightness ratios between meter scales and images of ceiling or fixture bottom of from 5 to 2 to 1.<sup>6</sup> (Open bottom luminaires produce glare images up to

60 times the brightness of the scales.) The additional benefit of indirect lighting, namely, diffuse shadow-free illumination uniformly distributed on the work surfaces, is a complementary feature not to be overlooked. The average maintained illumination is 45 foot-candles, an adequate value for the more critical tasks encountered by the students.

#### NEED JUSTIFIES USE

The need for a high value of illumination justifies the use of fluorescent equipment. The average electrical machine load of 50 kw. (peak, 100 kw.) presents a problem in the dissipation of heat. The fluorescent lighting load of 40 kw. saves 40 to 60 kw. of equivalent heat over a comparable incandescent lighting system. With the latter, artificial cooling would have been required to preserve comfortable working conditions, whereas a less expensive forced air ventilation method suffices.

<sup>6</sup>Scale brightnesses range from 30 to 35 ft.-L.

The layout arrangement involves 8 and 16 foot lengths of fixtures on 8 foot centers suspended 3 feet 6 inches from the ceiling and centered in the bays formed by the beams. The fixtures are of the plastic bottom type equipped with four 300 ma., instant-start fine line lamps in each 8 foot section for maximum output and economy. Exposed piping and ducts are rendered inconspicuous through painting white, with walls and floor treatment similar to that in the standard classrooms.

All the machines have been painted a light gray to minimize objectionable brightness contrasts. The net result is a well balanced and comfortable visual environment of high quality, free from shadow and glare, and with ample quantity of illumination on both horizontal and vertical work surfaces.

The satisfaction of staff and students expressed from two years' experience in working under the excellent seeing conditions described emphasizes what can be accomplished in lighting.

### Survey of Building Costs Conducted by College and University Business

College	Function	Type Construction	Total Cost	Total Cubage	Cubic Foot	Contract Cost for			Approximate Wage Rate						Date of Contract Award
						Gen. Construction	Heating, Plumbing	Electrical	Electricians	Bricklayers	Masons	Plumbers	Carpenters		
Del Mar	Gymnasium	Masonry, steel and concrete	\$ 219,537	846,300	\$0.34	\$ 193,474	\$ 13,000	\$ 13,063	\$2.25	\$3.00	\$3.00	\$2.25	\$2.00	Sept. '49	
Morris Harvey	Complete college service except residence or athletic	Steel, brick and concrete	1,541,167	1,900,000	0.80	1,266,509	200,020	74,638	2.30	2.50	2.50	2.25	2.12½	Jan. '50	
Texas Western	Science Building	Concrete and native stone	333,700	415,675	0.80	264,400	38,600	30,700	2.25	2.25	2.25	2.25	2.00	Oct. '49	
Texas Western	Auditorium	Concrete and native stone	500,000	565,000	0.88	416,200	31,500	52,300	2.25	2.25	2.25	2.25	2.00	Oct. '49	
N.D. State School of Science	Athletics	Steel and brick	212,000	525,000	0.40	177,000	20,000	15,000	2.00	2.25	.....	2.10	2.00	Jan. '50	
U.C. at Berkeley	Jurisprudence	Steel, reinforced concrete stacks	1,354,512	1,915,000	0.71	1,101,500	\$108,000 \$ 34,535	80,735	2.40	2.81½	2.81½	2.25	2.16	Jan. '50	
U.C. at Berkeley	Medical Research Addition	Reinforced concrete	385,100	196,229	1.96	273,720	44,780 48,700	15,720	2.50	3.00	.....	2.50	2.16	Jan. '50	
East Tenn. State	Health and Physical Education	Fireproof	582,484	1,400,000	0.42	Included in Total Cost	.....	.....	2.00	2.50	2.50	2.25	1.65	Dec. '49	
Iowa State	Classroom, Lab., Office (Agronomy)	Masonry	748,625	844,400	0.89	565,340	152,220	31,065	2.25	2.75	1.92½	2.25	2.00	Feb. '50	
Iowa State	Classroom, Lab., Office (Electrical Engr.)	Masonry	858,485	992,400	0.86	557,272	106,400	194,813	2.20	2.75	1.90	2.00	2.00	Oct. '48	
Iowa State	Men's Dormitory Addition	Masonry	738,380	894,000	0.83	623,500	87,965	26,915	2.25	2.75	1.92½	2.25	2.00	Nov. '48	
U. of Ill.	Student-Staff Apartments (1st Unit)	Reinforced concrete & masonry	1,313,936	861,100	1.99	886,849	122,074 134,439	66,927	.....	.....	.....	.....	.....	July '48	
U. of Ill.	Student-Staff Apartments (2nd Unit)	Reinforced concrete & masonry	1,038,000	550,000	1.89	566,160	93,656 120,456	45,671	.....	.....	.....	.....	.....	June '49	
U. of Ill.	Veterinary Medicine	Reinforced concrete & masonry	1,626,433	920,200	1.77	701,859	155,594 82,990	58,966	2.32½	2.80	2.80	2.37½	2.35	Feb. '50	
U. of Ill.	Hospital Addition	Steel frame and masonry	6,626,020	3,120,000	2.19	2,988,850	948,300 331,900	540,928	2.50	2.55	2.55	2.45	2.45	Dec. '49	
El Camine	Student Union—Cafeteria	Reinforced concrete	414,000	400,000	1.03	330,975	30,400 24,625	28,000	2.50	2.62½	1.75	2.50	2.12	Dec. '49	
State A. & M., Magnolia, Ark.	Girls' Dormitory	Brick	419,303	1,184,706	0.35	339,756	69,837	9,710	1.50	2.50	2.50	2.00	1.50	.....	
Alabama Polytechnic Institute	Classrooms and Offices	Reinforced concrete & masonry	385,000	429,000	0.90	No breakdown available at this time.			1.80	2.50	2.50	2.25	1.67	.....	

# CENTENNIAL *celebration takes*

## *a good six months or more of planning*

IT IS NOT AN EASY TASK TO PREPARE for a college or university centennial, but this important occasion is one that is in the near or far reach of each successful institution.

Such an important affair cannot be prepared for in a few weeks. For a thorough job, six months is the minimum time requirement. Nor should the details of preparation fall into the hands of a group of faculty members, because too much extracurricular time is required.

Plans for a centenary celebration usually are allocated to a committee comprised of the president, the business manager, the librarian and, primarily, the department of publicity and the entire public relations staff. An experienced centennial director who has lived through the nightmare of preparation is a good investment. He knows all the do's and don't's; he knows the way of greatest economy and least confusion.

### MAILING THE INVITATIONS

Invitations for the centennial should come from the office of the president and should include members of the board of governors. The bids should be worded so as to include the full name of the president and mention of the chairman of the board. Extreme care should be executed in the mailing, first of the announcement and, within the following two weeks, the actual invitation. Each should contain a "will or will not be present" for (1) the convocation, (2) Civic Day, and (3) Alumni Day.

Caution is required in compiling a mailing list for invitations. College presidents within the state should have prime consideration, followed by all presidents within the association. Care should be executed in obtaining degree titles and, in particular, honorary degrees and whence bestowed. As a preparation, the college should have at its disposal a résumé of the collegi-

### GEORGE M. SMITH

Director of Public Relations  
Saint Francis College  
Loretto, Pa.

ate and university background of the presidents within the state and the association.

In delegating the entire process of planning to the department of public relations, the administration is channeling authority to its proper place. In doing so, however, it should be predetermined as to how much this department can depart from its budget in the acquisition of extra help. A conference with the administration and the business management should set a fixed amount. In most cases the active alumni are quite ready to meet this allotment if a full explanation is given when they are solicited.

### PUBLICIZE EVENT EARLY

Publicity precedes invitational bid. This can be arranged on a national scope several months ahead of the actual issuance of invitations. The radio is an excellent means. College or university organizations, such as the glee club, the band, after-dinner speakers, choral groups, radio clubs, and photography clubs, all can be enlisted as means of centennial advertising and promotion. Many radio stations are only too eager to present a half-hour program—perhaps once a week for six weeks. This should carry out a historic theme.

Individuals who speak before local organizations and state Chamber of Commerce groups can always carry the message of the one hundred years of progress of Alma Mater. Newspapers will always publicize the event. Historical sketches in the Sunday supplements and the rotogravure sections are beneficial. A series of articles featuring milestone events and important alumni and faculty members is a stimulating build-up. Alumni residents in every locality can make use

of the radio to acquaint fellow alumni with dates and pertinent data.

The invitation committee should proceed with unusual caution. Special emphasis should be placed on contributors to every cause on campus. Public officials are easily slighted through neglect to inform them of the event and can be permanently offended by neglect to invite them, especially to the Civic Day ceremony.

In all, the event should be of two days' duration. A compact, well ordered series of events should lead up to the convocation ceremony. Civic Day should be well broken up into nonprolonged programs indoors as well as on the campus.

A selected group of speakers, not too many in number and well known to the community, can highlight the events of the first day. The program committee should be well aware of the background of the speakers and their desires. Many unaccustomed to a microphone find themselves frightened when asked to speak into one. Those whose voices are weak or husky should be consulted prior to appearance. The aspiring politician leaps at the chance to speak on such an occasion. The "has-been" values the chance as an actual comeback. Consider well who is to speak.

### ARRANGE FOR ACCOMMODATIONS

Adequate campus arrangements for housing and feeding alumni visitors and dignitaries are a primary duty of the committee assigned to this task. It does not suffice merely to "house" visitors. College presidents would hardly feel at ease with the boisterous homecoming class of 1914. Prelates and visiting clergymen would hardly be comfortable in the same hall with a group of freshmen. Reservation of hotel space or, in the instance of a small town, of rooms adjacent to the campus is desirable. The motor pool set up for transportation of visitors

The motor pool can be organized among students or solicited from local businessmen and automobile dealers. A 24 hour service should be set up for meeting incoming individuals and groups. Drivers should be instructed

Programming and a historical brochure are definite "musts." Programs once printed should never be altered. The brochure might well carry a history, preferably pictorial, of important

decade-by-decade advancement at the school. One of the cutting insults of a college is to err in regard to persons or places in this all important résumé of activities. The historian's task is irksome, for he must check minute details, including every date. Thousands of dollars have been lost to a college because one alumnus was slighted by being left off the invitation list, lost in the mob on campus, or his deeds, perhaps, were misrepresented in the institution's historical brochure.

**IBBIE JONES**

The receipt gives the consecutive number of purchase items, price and total amount of each sale. The receipt given to the customer is a form of publicity which compels correct registration and enforces accurate

<p style="text-align: center;"><b>Alabama Polytechnic Institute</b>  <b>Auburn, Alabama</b></p> <p style="text-align: center;"><b>SALES REPORT</b></p>							
To the Accountant:		Department <b>Mell St. Cafeteria</b>					
From <b>I. Jones, Food Director</b>		Date <b>2-29-50</b>					
File No.	Date	Name	Item	Credit Sales	Collection on Credit Sales	Cash Sales	Total Collections
250	2-29-50	Mell St. Cafeteria	Dinner				151 52
150	3-1-50		Breakfast				78 56
230	"		Coffee Hour				82 50
604	"		Lunch				249 05
							<hr/> 561 65
		Sale of meal tickets					
		8 books @	5.10 ea	40.80			
		16 books @	10.20 ea	163.20			
							<hr/> 204 00
							<hr/> 765 64
		Cash Register Readings					
		Dinner	200.28				
		Breakfast	101.78				
		Coffee Hour	99.30				
		Lunch	378.22				
			<hr/> 779.58	Total cash register readings			
			561.64	Less cash intakes for meals			
			<hr/> 217.94	Value in meal ticket coupons			

The original report, together with the cash, goes to the bursar's office.



Non-Transferable

B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	

Jan. **MEAL TICKET FOR** 1950  
**MAGNOLIA DINING HALL**

Name \_\_\_\_\_ Room No. \_\_\_\_\_

17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B

records. In the machine is a second tape which runs continuously throughout a given period or meal.

The cashier is given a general operating fund of \$150. At the beginning of each meal the cash register is cleared and made ready for the new tapes. At the end of each day the sales reports are made out and the revolving fund is restored.

We have meal ticket books that can be purchased by the customers. These are made of various sheets of different value denomination coupons, namely, values of 50 cents, 25 cents, 10 cents, 5 cents and 1 cent, and each coupon is perforated for tearing out. The pages of each value coupon denomination are in different colors. These books, issued from the safe in the food director's office, are sold in numerical order.

The cash register is placed at the end of the cafeteria line. Each customer's tray of food is checked as he passes, and each item is rung up on the register. Then the customer either gives value coupons in the amount of the register reading or pays in cash. When the meal hour is over, the retaining tape in the cash register is taken from the machine. The amount of value coupons and cash for the given period must tally with the grand total on the cash register tape.

The cashier then makes a sales report on the forms provided for that purpose. He lists the following information: (1) the number of people served; (2) the date; (3) the name of the dining hall; (4) the meal covered—breakfast, lunch or dinner; (5) amount of cash intake for each meal included on the report, and (6) the cash register readings for all the meals covered by that particular report. He then deducts the amount of cash from the total of the register readings to give the amount of meal value coupons collected.

The report is taken to the food director's office for signature, then to the bursar's office of the college. A copy of the report goes to the food director's office for her files, together with all the total cash register tapes and the coupons collected. The coupons are counted by the secretary and totaled, then checked with the sales report for any discrepancy that might occur. The original report, together with the cash, is taken to the bursar's office. The general cashier checks the actual cash with the report. If one of the persons checking the report (actual cash or coupons) finds an error, it is reported to the one that made up the report and he makes the adjustment.

In case of shortage in the register readings and report, the cashier pays

the difference, but should he check over the same amount the following day, he is given the overage, because it is evident that this was an error in the amount of cash left in the register. In case he is over one day, the overage is placed in an envelope provided for that purpose. If he checks short the following day, the overage can be used to make up the shortage, because of the possibility of the same type of error.

Overages are allowed to accumulate over a period of time and then, if not used, they are rung up on the register as a sale and the money turned over for sales reports.

This system is the result of a three-year study in regard to cash control. We find it a foolproof system because of the frequent check (after each meal) and because of the rigid rule of preparing daily sales reports. Any error can be detected and each detail can be checked until the cause of the error is found. This system is not advised for all types of food establishments, but for strictly commercial types, I do not believe it has a superior!

In a dining room where students pay on a board basis, we have a cafeteria that offers a limited choice. In this we have a small electric cash register. The boys are given meal cards in receipt for their board. This card is designed in such a way that there are three blocks per day, indicated by the letters "B," "L" and "D," with the date of the month listed consecutively around the exterior edge of the card. Students pass down the line and select their food and pass on to the cash register. Those living in the residence hall present their cards, which are punched by a checker. Should the customer not be a resident, he pays the cashier as he passes the register. This method is proving satisfactory for students who pay on a board basis.

The meal ticket book has various colored sheets of different denomination coupons.

<b>\$5.50</b>		Book N <sup>o</sup> <b>00201</b>	
<b>ALABAMA POLYTECHNIC INSTITUTE</b>			
AUBURN, ALABAMA		MELL ST. CAFETERIA	
Name _____			
Address _____			
<b>Not Transferable + Coupons Void If Detached</b>			
<small>WELDON, WILLIAMS &amp; LICK, FT. SMITH, ARK.</small>			

# FROZEN CITRUS JUICE eliminates the "squeeze"

ORPHA MAE THOMAS

Associate Professor of Institution Management  
Teachers College, Columbia University

IT IS NOT NECESSARY TO REMIND YOU how valuable vitamin C, or ascorbic acid, is in the diet of persons of all ages and in all conditions of health. Among other functions, vitamin C builds firm gums, increases resistance to infection, and helps maintain strength of the blood vessels, protecting them from bruising. We all know that the citrus juices are some of the best sources of this nutrient. Thus all types of food services—hospitals, schools and residence halls—prepare large quantities of citrus juices daily. This preparation has required much labor and has been costly. The people in the citrus industry have been interested in assisting in the solution of the problem. They have experimented in processing citrus products and each of their products has definite and different advantages.

Single strength canned citrus juices were the first processed products. They eliminated the cost of extraction in the institution or home kitchen, were available throughout the year, and could be stored at room temperature.

## UNDESIRABLE QUALITIES MINIMIZED

Grapefruit juice was the first citrus juice to be preserved in tin containers. It had a characteristic flavor which could be at least partially retained during the prolonged heating that was required. A fair product was obtained when Dr. H. H. Mottern applied the flash pasteurization method to orange juice before canning it. Through the cooperative and individual efforts of federal, state and commercial technologists, methods have been developed for extracting juice with a minimum of undesirable qualities, processing juices quickly and uniformly, avoiding unfavorable effects of enzymatic action or contact with metals detrimental to flavor, de-aerating and de-oiling canned juices, careful control of heating and cooking to avoid overheating, and, finally, closing the con-

tainer with a minimum of oxygen and other contaminants.

Although these precautions can produce freshly canned juices with flavor and food value fully as good as raw juice, both of these qualities may deteriorate during storage. The speed with which this occurs depends on several factors, the types of fruit and the temperature at which they are stored. Grapefruit juice is best able to resist these changes caused by high storage temperatures. The other citrus juices, in their order of resistance to high temperatures, are as follows: orange-and-grapefruit blend, orange, tangerine, lemon and lime. The time which the juices remain satisfactory varies from a few months at 95° F. to a year or longer at 80° F. and to as much as five years when they are stored at 0° F.

Because of the cost of shipping juices great distances, the concentration of citrus juices was the next process developed. The methods used have been constantly improved over the last 15 or 20 years. Through the use of lower pressures concentration has been accomplished at lower temperatures and in shorter times, resulting in products retaining more of their original flavors.

Concentrated canned orange juice reacts even more rapidly at high temperatures than do single strength juices. Storage should be at low temperatures, preferably in refrigerators, in order to prevent this deterioration, inasmuch as darkening, staling and loss of ascorbic acid occur at excessively high temperatures.

As early as 1930, J. J. R. Bristow of Dunedin, Fla., was working with the freezing of orange juice. While its excellent flavor was recognized its progress was retarded by lack of holding facilities, satisfactory delivery conditions, and the unfamiliarity of the housewife regarding its handling. Recognizing these difficulties as being

almost insurmountable, Mr. Bristow then turned his attention to the concentration of orange juice at low temperatures. After several years of laboratory work, he perfected a method of doing this without changing the flavor materially. Then an evaporator had to be developed to duplicate this laboratory process in a commercial way. This product was pasteurized and concentrated to one-eighth of its original volume, and put on the market as early as 1938. It was accepted fairly well, especially when a small amount of fresh juice was added.

## ORANGE JUICE USED IN SCHOOLS

This canned concentrated orange juice (one-eighth of the original volume) is the type supplied to the school lunch program by the United States Department of Agriculture. A number of recipes for the use of this were developed for the Florida Citrus Commission, and can be obtained free from its Lakeland office upon request.

In 1944, it was announced that Dr. A. L. Stahl of the University of Florida had developed a method of concentrating orange juice by freezing out the water, centrifuging the juice from the ice, and refreezing in several steps, until the product was concentrated to about one-fourth of its original volume. This product had not been pasteurized, and it was necessary to keep it frozen.

The next advance combined the advantages of these two last mentioned forms of concentrates. Pasteurized juice which was reduced to one-eighth of its original volume was combined with fresh natural strength orange juice to produce a product of 42° Brix. This gave a concentration of approximately one-fourth the original volume, and this was then frozen. Commercial production of this frozen product began in 1945.

The latest sensational development in the processing of citrus juices is

the frozen concentrated orange juice, which was packed commercially for the first time in 1946. The process used in manufacturing this concentrate is a low temperature evaporation operation plus an add-back of freshly pressed juice, followed by quick-freezing and storage at 0° F. All major manufacturers of frozen citrus concentrates use this basic process which was developed by the research department of the Florida Citrus Commission. Experimental work on the process in 1944 and 1945 was conducted cooperatively with the U.S.D.A., at its Citrus Products Laboratory in Winter Haven, Fla., by Dr. L. G. Mac Dowell, Dr. Edwin L. Moore and Cedric D. Atkins of the commission's research department. J. L. Heid and other research men have helped the concentrating industry greatly, making contributions in the improvement of various methods and machinery.

#### "ADD-BACK" RESTORES FLAVOR

Freezing of fruit juices is not a new idea, nor is concentration of juices; however, the combination of these without loss of "fresh" flavor is the accomplishment that has brought a booming development into the citrus industry since the war. The add-back of unprocessed juice just prior to freezing is the step which gives the concentrate its excellent flavor, in contrast to the "flat" taste which otherwise results from loss of volatile constituents. The manufacturing method developed by the citrus commission and certain standards now prescribed by Florida state law guarantee an acceptable uniform product. At every stage of the process from extractor to can, the solids, acid and vitamin content, and micro-biological condition are tested by the laboratories. The resulting product is frozen, sealed under vacuum in 6 ounce and quart cans, and held in that condition until used. This product, when reconstituted properly, approximates the flavor and texture of fresh juice. This reconstitution includes dilution with three parts of water to each part of frozen juice, still in the mushy state, and the aeration of the juice by thorough whipping. This last step is important in restoring the fresh character to the liquid.

It is not necessary to take the product out of the refrigerator the night before and defrost it for use the following morning as was necessary in single strength frozen juice. Defrost-

ing and reconstituting can be accomplished in a minute or two. Aeration can be done by whipping the juice thoroughly, or by pouring the juice from one container to another several times.

Other juices are being concentrated in a similar fashion. Grapefruit, orange-grapefruit, tangerine, grape, apple and cranberry juices are on the market.

There are several advantages in using this new type of juice. The labor involved in its preparation is greatly reduced. The disposal of peel and seeds is completely eliminated. The temperature of the frozen juice defrosted by the addition of tap water is correct for serving—the water has melted the frozen juice, and the juice has chilled the water.

Two other advantages are outstandingly important to food service directors using these products. The supply is constant throughout the year while the supply of fresh fruits is limited by season, and the cost of each ounce or portion served is known and constant.

One concern of a food service manager is the acceptance of a new product by the public. No frozen product has ever caught the public's fancy so quickly since frozen foods began. The acceptance of frozen orange juice is best expressed in consumption figures. "The production in 1947 was perhaps 3,000,000 cans. In 1948 the estimate of the production was 50,000,000 cans. For 1949 the quantity totaled 200,000,000 cans. The industry expected this last figure to be doubled in 1950."<sup>1</sup> *Quick Frozen Foods* of New York reports that the use of frozen orange juice concentrates increased 295 per cent in 1949 over 1948<sup>2</sup> and estimates that more than 25,000,000 gallons, or about 600,000,000 cans, will be packed in 1950.<sup>3</sup> The *American Home Magazine*<sup>4</sup> found in a survey that 44.2 per cent of its readers answering the questionnaire used frozen orange juice; and of these more than 70 per cent consumed one or more cans per week.

#### ORANGE JUICE SALES TWO TO ONE

In another survey conducted for the Florida Citrus Commission, it was re-

vealed that 70 per cent of the "consumer panel" families now using concentrates started buying them within the last six months.<sup>5</sup> In November 1949 it was reported that quick frozen, concentrated orange juice was out-selling, two to one, the combined volume of fresh frozen peas and strawberries, the two previous leaders in the field.<sup>6</sup> It has been predicted that of the 1950 total sales volume of all frozen foods, orange juice may represent as much as 50 per cent.<sup>7</sup> One-third or more of Florida's orange crop will go into orange concentrate this year,<sup>8</sup> and when the plants in process of construction are completed, as much as two-thirds of the crop may be thus processed.

The United States Department of Agriculture announced "Tentative Standards for Grades of Frozen Concentrated Orange Juice," effective July 25, 1949. These, among other rating factors, call for a Brix value of a minimum of 41.5° and a maximum of 43.5° for Florida juice and an acid ratio of 12:1. The addition of sugar would bar a juice from the grade A rating. The state of Florida has enacted some new regulations since the beginning of the year, and the United States grades probably will be made more nearly to conform with these in the near future.

A significant aspect of the product's phenomenal rise to popularity has been the uniform high quality achieved by the processors. This can be attributed to the fact that a relatively few firms of recognized character have been the major producers in the field and to the fact that minimum standards of quality are prescribed by Florida state law and must be rigidly adhered to by manufacturers, large and small. The Florida citrus industry, which produces 90 per cent or more of the national pack, is jealous of the reputation this "Cinderella" item enjoys in the frozen food field, and is taking every possible precaution to protect its present high quality.

Thus large quantity food services may now serve orange juice of good flavor and with the high nutritive values retained, and do so "without the squeeze."

<sup>1</sup>Copyrighted 1950 by the American Chemical Society. Reproduced by permission from Chemical and Engineering News, pp. 242-245, Jan. 23, 1950.

<sup>2</sup>Quick Frozen Foods, December 1949, p. 35, quoted with permission of publisher.

<sup>3</sup>Quick Frozen Foods, January 1950, p. 80, quoted with permission of publisher.

<sup>4</sup>American Home Magazine Reader's, quoted with permission of publisher.

<sup>5</sup>Quick Frozen Foods, February 1950, p. 216, quoted with permission of publisher.

<sup>6</sup>Quick Frozen Foods, November 1949, p. 63, quoted with permission of publisher.

<sup>7</sup>Quick Frozen Foods, February 1950, p. 226, quoted with permission of publisher.

<sup>8</sup>Quick Frozen Foods, January 1950, p. 78, quoted with permission of publisher.



# NEWS

**Universities Cautioned on Tax Exempt Status . . . Vets Must Begin G.I.**

**Training Within 13 Months . . . Issue Invitations for Columbia's 200th**

**Anniversary . . . Honor George F. Zook . . . Colleges Apply for Housing Loans**

## **World's Educators Invited to Columbia's 200th Anniversary**

NEW YORK.—Gen. Dwight D. Eisenhower on May 15 mailed to educational institutions throughout the world invitations to attend or observe Columbia University's 200th anniversary celebration during the year 1954.

The theme of the year-long observance will be "the ideal of full freedom of scholarly inquiry and expression, the right of mankind to knowledge and to the free use thereof."

Not only are the universities, libraries, museums and learned societies in all parts of the world invited to attend the celebration but they are invited to join in the observance and advance those academic ideals on their own campuses and in their own communities in ways considered by themselves to be most fitting and effective.

A convocation will be the major event of the 1954 celebration and heads of educational institutions of many lands also will be invited to New York to participate in the convocation.

## **July 1951 Deadline to Begin G.I. Training**

WASHINGTON, D.C.—A recent Veterans Administration regulation reminded veterans that the deadline for most veterans starting a course of education and training under the G.I. bill is 13 months away, July 25, 1951. The G.I. bill provides that generally training must be initiated by July 25, 1951, or four years after a veteran's discharge, whichever is later, and it must be completed by July 25, 1956.

Most veterans are subject to the 1951 and 1956 cut-off dates, but there are the following exceptions:

1. Veterans discharged after July 25, 1947, have four years from date of

discharge in which to begin G.I. bill training. However, they must finish by June 25, 1956.

2. Veterans who enlisted or reenlisted under the Armed Forces Voluntary Recruitment Act (between Oct. 6, 1945, and Oct. 5, 1946) are not bound by either deadline. Instead, they have four years from the end of that enlistment or reenlistment period in which to start, and nine years from that time in which to complete their course of training.

## **Launches Natural Resources School**

ANN ARBOR, MICH.—The first School of Natural Resources in the world will be opened next fall at the University of Michigan. A pioneer in the field of natural resources, Michigan plans to expand the activities of its school of forestry and conservation. Teaching and research will be widened to consider everything that nature has placed on, under and over the earth in its relation to man.

The Charles Lathrop Pack Forestry Foundation, headed by Randolph G. Pack of New York City, is helping in the support of the new school through two grants: \$10,000 a year for 10 years for an additional faculty member and \$10,000 a year for three years for research.

## **General Pay Raise**

SWEET BRIAR, VA.—All members of the faculty and administrative staff of Sweet Briar College will receive salary increases effective July 1. Salary increases include across-the-board payments to regular full-time faculty members and percentage increases to administrative staff and part-time teaching personnel. Raises in pay for office staff members also have been approved by the board.

## **A.A.U. Report Warns Against Loss of Tax Exempt Status**

CAMBRIDGE, MASS.—Measures to increase financial support for universities and to discourage investments that might jeopardize the tax exempt status that educational institutions now enjoy have been recommended by the Association of American Universities, Dr. Henry M. Wriston, its president, announced last month.

Dr. Wriston cautioned universities in search of acutely needed new sources of revenue to avoid investments that might place them in the position of taking improper advantage of their tax free status. However, the amount of such "loophole" investments has been grossly exaggerated, said Dr. Wriston, and the effect on tax revenue has been negligible.

A committee of the association, which includes 37 leading American and Canadian educational institutions, has just completed an intensive study of financial and taxation problems. Members of the committee are: President James R. Killian Jr. of M.I.T., chairman; President Colgate W. Darden Jr. of the University of Virginia; President Harold W. Dodds of Princeton University; President Theophilus S. Painter of the University of Texas, and President Harold E. Stassen of the University of Pennsylvania.

The critical need, the committee reported, is for positive measures to conserve and increase income and resources if universities are to meet the educational needs of the youth of the nation. A government tax policy is needed which not only will protect university resources but will stimulate increased support through private philanthropy.

In making its recommendations, the committee reported its belief "that, in addition to investing its funds, it is

# NEWS. . . . .

proper for an educational institution to carry on a variety of other activities which primarily serve its students and members. Such activities aid the educational objectives of the institution and cannot properly be distinguished from the over-all operations of the institution. The committee believes that it is impractical, if not impossible, to segregate these activities. If the educational institution is to continue to be exempt from income tax, it must be wholly exempt from such taxes, and

any effort to tax one part and not another places in jeopardy the whole principle of tax exemption."

Discussing the problem of ownership and operation of business and commercial enterprises by educational institutions, the committee warned against transactions in which tax exemption might be claimed for an organization that would ordinarily be subject to taxation.

"The committee believes, however, that a different situation arises when a

manufacturing or mercantile business is carried on by a separate corporation or trust which would certainly not be entitled to tax exemption if all its property and income were not dedicated to some university and when such manufacturing or commercial business has no significant connection with the educational or scientific work of the university other than the attribute of producing income for it.

"It is sound policy," the committee believes, "for a university not to seek tax exemption for such a separate entity; and not to enter into a transaction involving such a separate entity if the advantage of the transaction depends upon the separate entity being free of federal income tax."

If those conditions are satisfied, the report continued, "the university should then continue to be free from income tax on the dividends or other distributions of income by such separate entity just as the university is free from income tax on other income.

"The committee believes that the taxation of such separate entities would cover practically all the business investments that have been subject to criticism. Few boards of trustees of a university would be willing to accept the liability that would be involved if such business enterprises were to be owned directly by the university, rather than by a separate corporation or foundation. If there should be any change in the revenue laws designed to tax such business operations, it should not be aimed at the university which receives income from the separate entity. Any effort to tax the university or some part of it would violate the tax exemption principle."

Although the committee believes that "a university should not be subject to tax on any earnings which it may derive from an operation carried on directly by the university, nevertheless the committee believes it is neither proper nor in the public interest for a university to carry on directly any manufacturing or mercantile business having no significant connection with the educational or scientific work of the university other than the attribute of producing income for it.

"The committee believes that an educational institution should be free from income tax on rents and royalties from its interests in real estate."

There has been criticism of transactions, said the report, in which an

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# "The Case of the Slippery Floor"

(OR, THE STORY BEHIND FLOOR SAFETY)

## THE CRIME:

Legs walk along . . . then suddenly slip and fall

## HOW IT HAPPENS:

The chief suspects are **BODY WEIGHT MOMENTUM** and the

**FRICTION TWINS** . As Legs walk, **BODY WEIGHT MOMENTUM**

keeps pushing them down and out , while the **FRICTION**

**TWINS** exert a counter-force to hold the feet in place

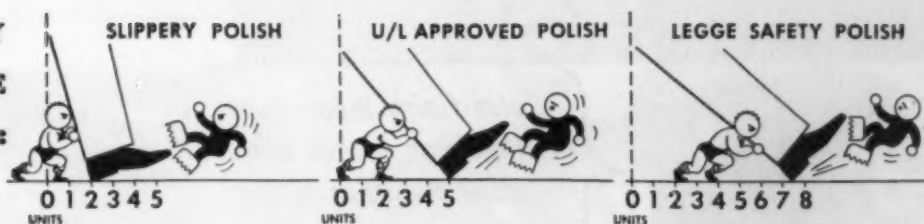
**BODY WEIGHT MOMENTUM** gets greater when Legs are farther

apart . But the **FRICTION TWINS** are no stronger

than the slip resistance of the floor. If it's slippery, there is little

**FRICTION** to overcome and down you go!

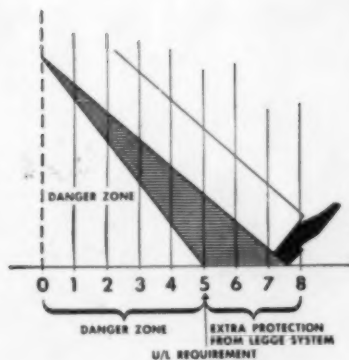
## HOW LEGGE SAFETY POLISHES SOLVE THIS CRIME:



With slippery waxes, Legs can only step out 2 to 3 units before **BODY WEIGHT MOMENTUM** overcomes **FRICTION** and creates a slip.

Underwriters' Laboratories passes a polish or wax as "slip-resistant" if Legs can go 5 units before **FRICTION** gives in and lets **BODY WEIGHT MOMENTUM** cause a slip.

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## NEWS

educational institution has directly or indirectly bought a business plant and leased it back to the seller. The committee believes that "many such transactions are unobjectionable. It may often be wise for a company to sell its plant to acquire cash, and the sale may not be possible unless the seller leases back the plant either because the seller needs occupancy for a period or because no buyer would pay the price if the plant had no tenant. There is no more objection to a university than to anyone else becoming the owner of such a plant. The exemption of the university from income tax on the rental received does not differ from its exemption from income tax on dividends or on rentals from other real estate. Any sound basis for criticism must rest on some special aspect of the particular transaction other than the tax exempt status of the buyer.

"To avoid jeopardizing the larger interests involved, the committee believes that it is wise for a university to refrain from purchasing property directly or indirectly in a transaction in which such property, or the real estate portion thereof, is to be leased back to the seller with an option in the seller to repurchase the property; and that it is also wise to refrain from directly or indirectly making such a purchase and lease-back in a transaction in which the university supplies no substantial part of the purchase price from its funds other than funds received in the transaction or from money borrowed on the transaction."

The committee recommended that the association take action to obtain a change in the federal income tax law permitting the deductible charitable gifts of an individual in any year to be free of the present 15 per cent limit. The report also urges that universities seek the enactment by various states of amendments to their corporation laws authorizing business corporations to make charitable donations.

"Universities should take such action as they deem appropriate," the committee believes, "to obtain an amendment of the federal income tax law so that charitable corporate gifts within the present 5 per cent limit, instead of being deductible on the tax return of the donor corporation, should to the extent of 50 per cent of the gift be a credit against the corporate tax." The present deduction reduces the tax by 38 per cent of the gift.

## Columbia University Departs From Usual Admission Policy

NEW YORK.—A radically new approach to college admission procedures is the "validation semester" plan being inaugurated by the Columbia University School of General Studies.

Under the plan, mature students may gain a bachelor's degree without ever having been awarded a high school diploma. The School of General Studies is Columbia's division of adult education. Its students must be at least 20 years old; most of them are engaged in business and the professions and attend classes in the late afternoon or early evening.

Beginning next September, an applicant who for good reason did not complete his high school education may take the General Studies aptitude examination. If he makes a satisfactory score, he will be interviewed, will file a formal application and, if accepted, will be permitted to take a specified program of basic courses as a non-matriculated student.

After one semester, demonstrated competence in these courses will validate his entrance requirements and enable him to be matriculated for degree candidacy. He will be given credit for the work done in the basic courses and will have no deficiencies because of the absence of a high school diploma.

Prof. Louis M. Hacker, director of the School of General Studies, calls the new plan "not an experiment but an exciting new adventure in education. It is a natural step for our school in view of the mature character of the students."

## Demand Best for June Graduates in Engineering

STATE COLLEGE, PA.—Contrary to gloomy reports published over the nation, the employment situation for June college graduates is good, according to George N. P. Leetch, director of placement at Pennsylvania State College.

An increasing number of industries have been interviewing men this year and more jobs are being offered, Mr. Leetch declares. The rise in business in the last three months has offset the gloom of the year's beginning, Mr. Leetch believes, for although industries



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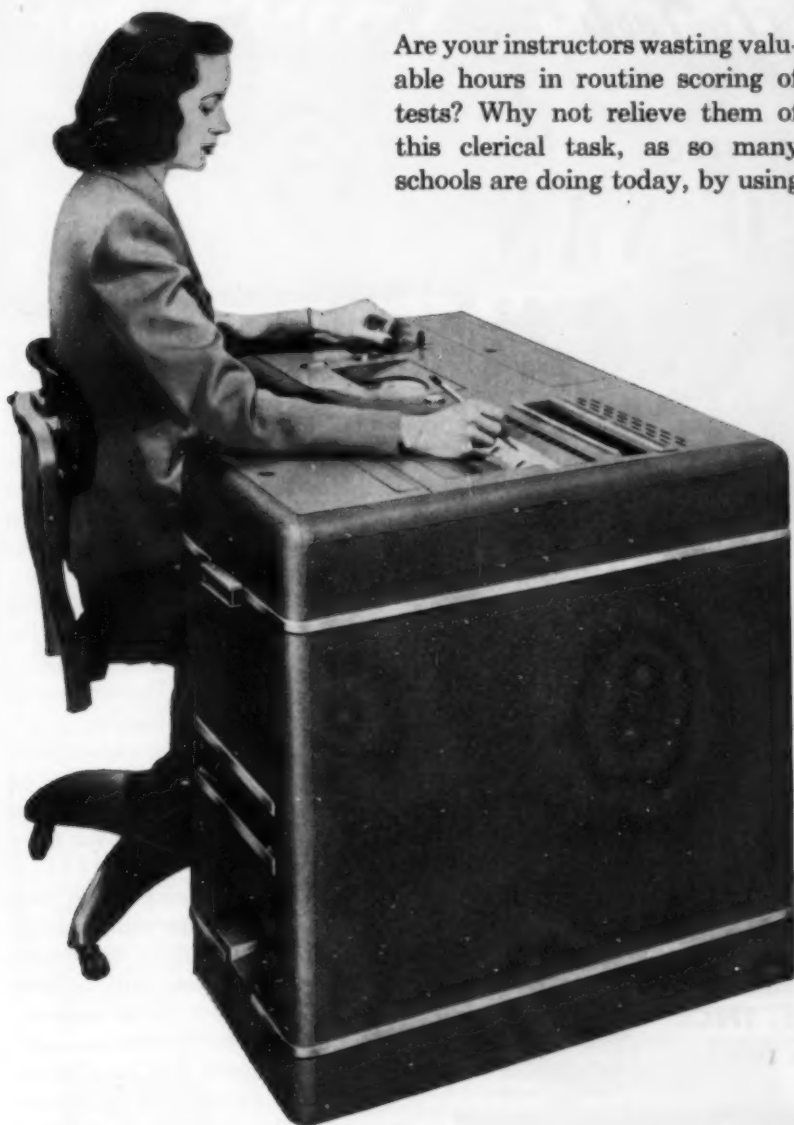


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## NEWS.

hire men for what they will produce five years or so later, after they have had training in industry, the number they hire is closely correlated with current business conditions.

Demand for men is especially good in chemical, mechanical, industrial and electrical engineering and metallurgy at Penn State. The demand is weak in forestry, physical education for men, and secondary school teaching, especially for students with majors in English and the social sciences.

### Now a Four-Year College

LOCKPORT, ILL.—Lewis College has been advanced to the status of a four-year institution, granting B.A. and B.S. degrees. The one-year and two-year terminal courses are being retained, however. Lewis College has been rated as "one of the most progressive junior colleges in the country" by the American Association of Junior Colleges. It has a 943 acre campus.

### A.C.E. Pays Tribute to George F. Zook

CHICAGO.—Tribute was paid to the wise stewardship of Dr. George F. Zook, retiring president, at the 33d annual meeting of the American Council on Education held here May 5 and 6.

At the business meeting Arthur S. Adams was named successor to Dr. Zook, effective next January 1. His salary will be \$20,000. Dr. Zook will continue as president for the remainder of the year. Other officers elected were: chairman, J. L. Morrill, president of the University of Minnesota; first vice chairman, Fred D. Fagg Jr., president of the University of Southern California; second vice chairman, William Jansen, superintendent of schools, New York City; secretary, John E. Ivey Jr., Atlanta, Ga.; treasurer, Frederick P. Siddons, Washington, D.C.

Some 375 representatives of member institutions attended the sessions at which the chairman, Dr. James B. Conant of Harvard, presided.

### Many Colleges Apply for Housing Loans

WASHINGTON, D.C.—Colleges and universities are flooding the Housing and Home Finance Agency with applications for loans with which to build student and faculty housing. The loans are authorized under the Housing Act of 1950, signed by President Truman late in April.

Under the educational provisions of the new act, contained in Title IV, the administrator has authority to lend a total of \$300,000,000 outstanding at any one time to institutions which show they are unable to obtain loans on comparable terms elsewhere. The loans will bear interest at 2.75 per cent, and have a maximum life of not more than 40 years.

A loan may not exceed the total development cost of the campus housing. Construction "must be undertaken so that economy will be promoted and must not be of elaborate design or materials."

The new program will be administered through the office of the administrator of the Housing and Home Finance Agency.

Title II of the new bill also revises previous policies relating to the dis-



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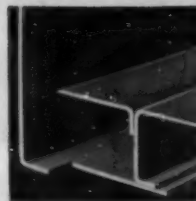
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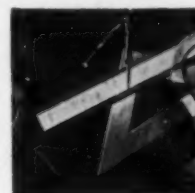
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**ADJUSTABLE LEGS** that can be raised or lowered to compensate for unevenness of floor. Legs are correctly spaced every two or three lockers (depending on locker width) to facilitate cleaning under lockers.



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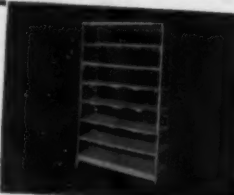
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## NEWS.

posals of federally owned war housing. This affects about 365,000 units still in federal ownership, of which nearly two-thirds are temporary structures. These may be transferred to local communities and to educational institutions and nonprofit organizations now operating such housing, provided they apply by Dec. 31, 1950, and pay the cost of any land involved. Temporary housing not transferred must be vacated no later than July 1, 1952, and removed as soon as possible thereafter.

### Advises June Graduates

BALTIMORE.—Johns Hopkins University is advising its graduates in industrial engineering to turn to small business in their search for a job. The supply is greater than the demand in large, nationally known industries, whereas small industries are in need of well trained persons who can apply the latest methods of management and production to the problems of small business concerns.

### Southwestern Suffers Severe Loss by Fire

WINFIELD, KAN.—A \$350,000 fire destroyed one of the two classroom buildings on the Southwestern College campus here recently. Classrooms, offices and auditorium contained in the building were completely gutted by flames. Nineteen typewriters, sewing machines, office equipment, and a few pieces of furniture were saved.

Valuable records kept in a vault were saved, but less important records stored in metal cabinets were ruined or destroyed. The organ and 45 German microscopes were destroyed, along with 150 modern paintings received the day before the fire.

President Alvin W. Murray, whose inauguration as president of the Methodist college had taken place only two months before the fire, announced that summer school would be held according to plan.

Campaigns for funds for two new buildings are nearing completion, and many offers of assistance were received following the fire.

### Cornell Opens Center for Hotel Administration

ITHACA, N.Y.—Statler Hall, Cornell University's new \$2,550,000 center for instruction in hotel administration, was formally opened on May 6. It is the first college structure designed specifically for instruction in the hotel field and is a complete 36 room practice inn. The building was given to the university by the Statler Foundation as a memorial to Ellsworth M. Statler, the late hotel executive.

Holabird and Root and Burgee, Chicago architects, designed the building. Decoration and furnishing of the club and inn sections were planned by Statler Studios. Most of the furniture, draperies and carpets were specially designed.

The building, in addition to hotel and club rooms, has laboratories, classrooms, offices and a cafeteria.

### Southern Educators Look to Industry for Help

KNOXVILLE, TENN.—Representatives of 10 southern colleges and universities met here on May 15 to consider the use of the laboratories and experimental projects of noneducational agencies and industries throughout the



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MODEL 451

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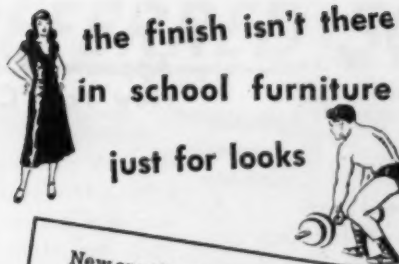
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for the initial cost, the best wood  
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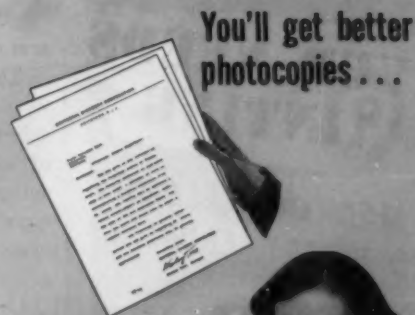
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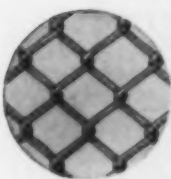


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## NEWS...

region to strengthen the South's system of higher education.

The Tennessee Valley Authority would be the first agency to be considered for such use. The committee of educators discussed with T.V.A. authorities the chemical, fertilizer, forestry, farm and other projects developed by T.V.A. and their application to graduate training programs.

Dr. John E. Ivey Jr., director of the board of control for Southern Regional Education, declared at the opening session of the committee:

"All over the South there are agencies and industrial organizations that have laboratories, plant equipment, and technical libraries that no university could match without spending thousands of dollars. These plants are staffed by men whose training and experience in specialized fields are matched on no campus."

It is in the graduate field that higher education in the South is weakest, Dr. Ivey pointed out.

### Service Center for Business and Industry

CLEVELAND. — Western Reserve University is to organize a Research and Service Center for Business and Industry with Dr. Jay L. Otis as its director.

In 1941 Western Reserve opened a personnel research bureau, which has been utilized by business throughout the nation. The new center will include this bureau, and along with it will be a business research bureau, a reading improvement service, and the services of such departments of the school of business as accounting, finance, industrial management, and marketing and merchandising.

The center will study not only the problems of individual business concerns but many problems basic to all organizations. Its purpose is to provide business organizations with the talents of a staff of authorities and to give its students the benefit of laboratory experience in actual business situations.

### Texas College Builds

DENTON, TEX.—Contracts are about to be awarded on three new buildings for North Texas State College at a cost of \$925,000. They are a women's gymnasium and classroom adjunct, a new classroom building, and a stack addition for the library.

### Approves Plan for New York Colleges

ALBANY, N.Y.—The master plan of the state university trustees for establishing four-year liberal arts colleges at Plattsburg and Endicott and two-year community colleges at Middletown and Jamestown has been approved by Governor Dewey. His approval cleared the way for setting up the four colleges as permanent members of the state university system.

Champlain College, which has been operated at Plattsburg by the Associated Colleges of Upper New York, was scheduled to come into the state university system around June 1, while Triple Cities College at Endicott, a war-time unit of Syracuse University, will assume permanent university status about September 1.

### New College to Open

CALAIS, VT.—Vermont Community College, "an experiment in cooperative education," will be opened here next fall, according to an announcement. The college "offers persons of maturity and purpose an opportunity to study together at a reasonable cost through living simply and cooperating in their household chores and in the operation of a small farm." The faculty, too, will do chores.

### Bar Striking Students

COLLEGE PARK, MD.—The University of Maryland will not admit New York City students who participated in the recent mass demonstrations there, President H. C. Byrd has announced. Applications for admission will be closely checked to weed out those persons who clashed with the police in the disorders in support of more pay for teachers. The University of Maryland has no definite policy on admitting Communists or students with Communist tendencies. Each case is acted on individually.

### Collection to Alma Mater

HOBOKEN, N.J.—Stevens Institute of Technology has received a collection of personal papers and mementos from the estate of the late Frederick W. Taylor, "father of scientific management." Included in the collection are manuscripts, rough drafts of books, records of the installation of the Taylor system in plants, and a scientific library.



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## NAMES IN THE NEWS



A. G. Pannell

Martha B. Lucas, whose resignation is effective June 30.

Dr. Anne Gary Pannell, dean of Goucher College, Baltimore, has been named president of Sweet Briar College, Sweet Briar, Va. She succeeds Dr.

Dr. Horace A. Hildreth, former governor of Maine, was inaugurated as president of Bucknell University, Lewisburg, Pa., April 29. Dr. Hildreth is the ninth president of the 104 year old institution.

Ralph W. Turner, assistant headmaster at Emerson School for Boys, Exeter, N.H., will succeed Edward Everett Emerson as headmaster on July 1. Mr. Emerson will continue his association with the school he has served for 19 years in an advisory capacity.

Dr. Arthur S. Adams, president of the University of New Hampshire at Durham since 1948, has announced his resignation to assume the presidency of the American Council on Education on January 1. He will succeed Dr. George F. Zook, who has served as head of the council since 1933.



A. S. Adams

Dr. Glenn G. Bartle has been appointed provost of the new liberal arts college in Broome County, New York State, and Dr. Frederick A. Morse has been appointed provost of Champlain College, the new liberal arts college at Plattsburg, N.Y. Both appointments were announced by Dr. Alvin C. Eurich, president of the State University of New York, whose trustees recently established the title of provost for the administrative heads of liberal arts colleges.

Lawrence O. Paul, business manager of Armour Research Foundation of Illinois Institute of Technology, Chicago,



L. O. Paul



J. L. Knight

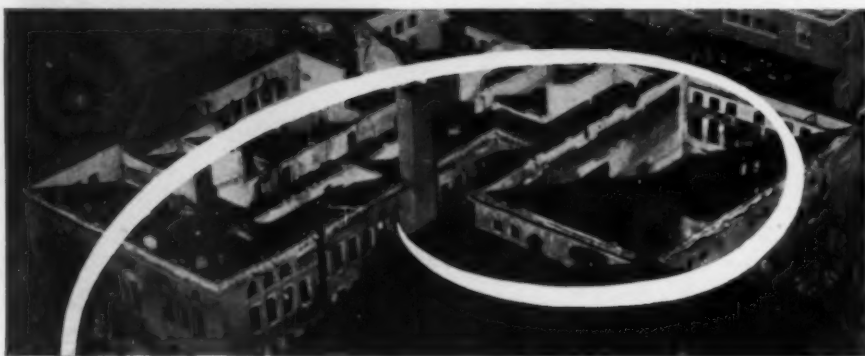
has been named assistant director of the foundation. James L. Knight, assistant business manager, has succeeded Mr. Paul as business manager.

Dr. Edgar C. Cumings, who resigned as dean of DePauw University to assume the vice presidency of Coe College, Cedar Rapids, Iowa, has been succeeded at DePauw, Greencastle, Ind., by Dr. Louis W. Norris, head of the university's department of philosophy and religion. Before joining the DePauw staff in 1948, Dr. Cumings had been president of Canterbury College.

Charles R. Clegg, first president of the North Georgia Vocational School, has been elected president of Young Harris College, Young Harris, Ga. He succeeds Dr. Walter Downs, who resigned the presidency but will remain at Young Harris as head of the department of teacher education.

Rev. James J. McMahon, S.J., rector of the Jesuit House of Studies, Nova-

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Write today for free folder on record protection, SC 684, to Management Controls Reference Library, Room 1323A, 315 Fourth Avenue, New York 10, N. Y.



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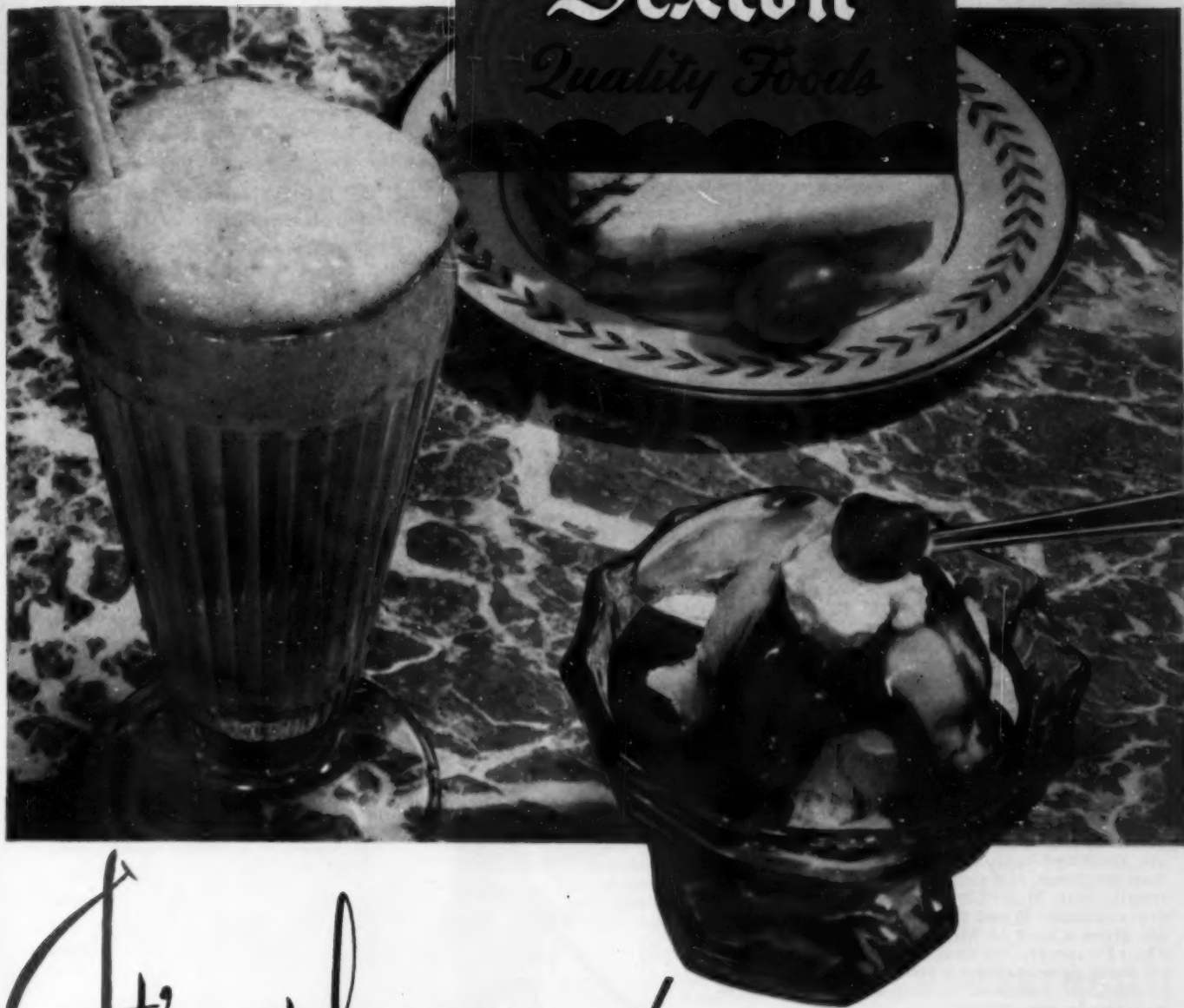
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# NEWS.

liches, P.I., has been named president of Ateneo de Manila.



R. F. Harrington

**Dr. Robert Franklin Harrington** has assumed the office of president of Samuel Huston College, Austin, Tex. The 37 year old president is a graduate of Boston University. He served as professor of religion and philosophy

and director of religious activities at Wiley College before accepting the pastorate of Mount Zion Church, New Orleans, which post he resigned to accept the appointment at the college. Dr. Harrington succeeded the late **Karl E. Downs**.

**Dr. William C. Finch**, acting president of Southwestern University, Georgetown, Tex., since the death of **J. N. R. Score**, was elected president at the annual meeting of the board of trustees in April.

**Dr. Val H. Wilson** will become president of Colorado Woman's College, Denver, when **Dr. James E. Huchingson** retires on July 31.



V. H. Wilson

**Dr. Huchingson**, who has served as president of the college for 19 years, will become president emeritus.

**Dr. Harvey Nathaniel Davis**, president of Stevens Institute of Technology, Hoboken, N.J., will retire as of Sept. 1, 1951, at which time he will have served as president for 23 years. Dr. Davis, who was inducted as the third president of Stevens Institute in 1928, will be 70 years old in June 1951.

**Dr. Glenn Kendall** will take over the office of president of Chico State College, Chico, Calif., July 1. Dr. Kendall has been serving as chairman of the division of education and psychology at San Francisco State College. He succeeds **Aymer J. Hamilton**.

**Aaron J. Brumbaugh**, vice president of the American Council on Education, will assume his duties as president of Frances Shimer Junior College, Mount Carroll, Ill., on July 1. The college recently has been reorganized into a coeducational institution. Dr. Brumbaugh succeeds **Albin C. Bro**, who left for service as cultural attaché in Korea under the Department of State.

**Dr. Arthur P. Coleman** became president of Alliance College, Cambridge Springs, Pa., June 4. **John A. Jadus** had been acting president since the resignation of **John J. Kolasa** two years ago.

**Dr. Kenneth I. Brown** will resign the presidency of Denison University, Granville, Ohio, on August 31, on which date he will complete 10 years as head of the institution. On September 1 Dr. Brown will become the first executive director of the Danforth Foundation, Inc., St. Louis.

**Ralph Prater**, associate professor of education at the University of Colorado, will become president of Bakersfield Junior College, Bakersfield, Calif., July 1.

**George W. Ince**, director of publicity and public relations at Alfred University, Alfred, N.Y., resigned May 31 to accept a position with the Caterpillar Tractor Co., Peoria, Ill. He joined the

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Coffman hall is used daily by Rochester, Minn., public school pupils, and frequently by outside groups. But the magnesite floor always is clean and shows no signs of wear.

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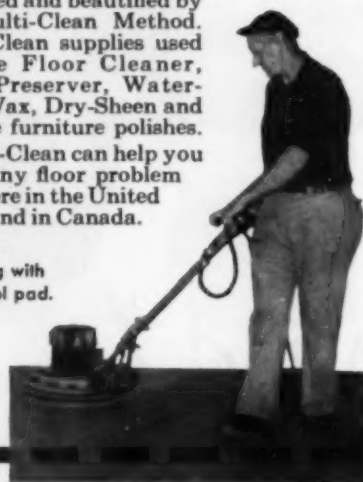


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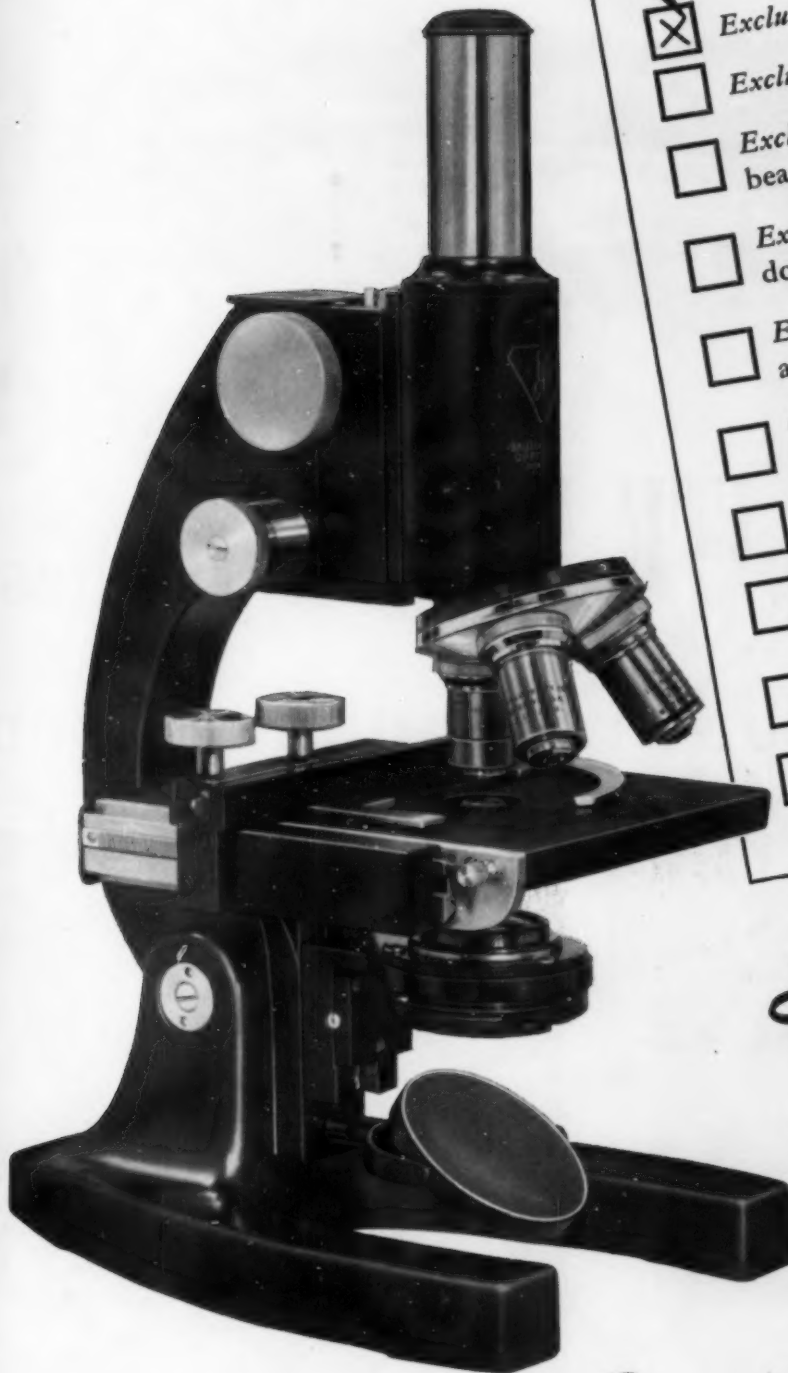
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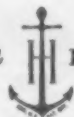
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# NEWS. . . . .

university staff in 1947 after a year as acting director of public relations for the Associated Colleges of Upper New York, Plattsburg.



J. L. Sullivan

Rev. J. Leo Sullivan, S.J., director of purchases and maintenance at the College of the Holy Cross, Worcester, Mass., is the newly elected president

of the National Association of Educational Buyers. Vice presidents elected at the N.A.E.B. convention held in Houston, Tex., last month are: Jamie R. Anthony, controller, Georgia School of Technology, Atlanta; John B. Rork, assistant business manager and purchasing agent, University of Denver, and Kermit A. Jacobson, purchasing agent, California Institute of Technology, Pasadena.

Harrison M. Davis Jr., president of Nasson College, Springvale, Me., will become headmaster of the Hackley School, Tarrytown, N.Y., on July 1. He succeeds Mitchell Gratwick, who is now headmaster of the Horace Mann School for Boys in New York.

Dr. Harold M. Dorr, a member of the faculty at the University of Michigan since 1929, has been appointed director of the university's summer session and will assume that post September 1. Dr. Louis A. Hopkins, the present director, will begin his pre-retirement furlough at the end of the 1950 summer session after 44 years of service to the university. For 16 of these years, Dr. Hopkins has been director of the summer session.

Thomas Raymond McConnell, dean of the college of science, literature and the arts at the University of Minnesota, has been elected chancellor of the University of Buffalo at Buffalo, N.Y. He will succeed Samuel P. Capen, who is retiring June 30.

Nahum R. Pillsbury Jr., formerly director of public relations at Westbrook Junior College, Portland, Me., has been appointed business manager of that college.

Dr. Clarence A. Dykstra, 67, provost of the University of California at Los Angeles, died of a heart attack May 6 while fighting a brush fire near his summer home at Laguna Beach, Calif. He was president of the University of Wisconsin from 1937 to 1945.

## DIRECTORY OF ASSOCIATIONS

### Association of College and University Business Officers

#### Central Association

President: Fred W. Ambrose, State University of Iowa; secretary-treasurer: L. R. Lunden, University of Minnesota.

#### Eastern Association

President: H. R. Patton, Controller, Carnegie Institute of Technology; secretary-treasurer: Irwin K. French, Middlebury College, Middlebury, Vt.

Convention: December 3-5, Royal York Hotel, Toronto, Canada.

#### Southern Association

President: C. B. Markham, Duke University; secretary-treasurer: Gerald D. Henderson, Vanderbilt University.

#### Western Association

President: Alf E. Brandin, Stanford University; secretary-treasurer: James R. Miller, University of California.

#### Schools for Negroes

President: A. I. Terrell, Winston-Salem Teachers College; secretary: L. H. Foster Jr., Tuskegee Institute.

### Association of College Unions

President: Donovan D. Lancaster, Bowdoin College; secretary-treasurer: Edgar A. Whiting, Cornell University; editor of publication: Porter Butts, University of Wisconsin.

### Association of Physical Plant Administrators of Universities and Colleges

President: L. L. Browne, University of Arkansas; secretary-treasurer: A. F. Gallistel, University of Wisconsin.

### American College Public Relations Association

President: E. Ross Bartley, Indiana University; secretary-treasurer: Edward P. Vonderhaar, Xavier University, Cincinnati.

Convention: June 27-30, 1950. University of Michigan, Ann Arbor.

### College and University Personnel Association

President: George W. Armstrong, University of Pennsylvania; secretary-treasurer: Ruth Harris, University of Illinois.

Convention: July 30-Aug. 1, Indiana University, Bloomington, Ind.

### National Association of College Stores

President: Herbert Hays, Berea College; executive secretary: Russell Reynolds, Box 58, 33 West College Street, Oberlin, Ohio.

### National Association of Educational Buyers

President: Holger B. Bentsen, George Williams College; executive secretary: Bert C. Ahrens, 45 Astor Place, New York, N.Y.

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# The Sanistand fixture

## NEW URINAL FOR WOMEN

*Comments*

Please drop in box. NO SIGNATURE NECESSARY.

✓ A good product which should be installed in all public rest rooms.

... A good idea, but needs redesigning because \_\_\_\_\_

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*A wonderful improvement  
much, much cleaner.*



WHEREVER the Sanistand has been installed—in restaurants, hotels, bus and railway terminals, colleges, theatres, factories, department stores and service stations—acceptance of this new fixture has been prompt and enthusiastic. Nearly 90% of the 5,029 questionnaires filled in by users at test installations prove definitely that women are in favor of the Sanistand—that they feel it is a great contribution to increased sanitation and convenience in public rest rooms for women.

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Large water area and large outlet make for complete sanitation.

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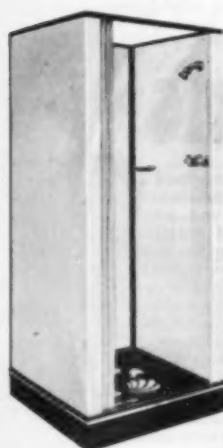
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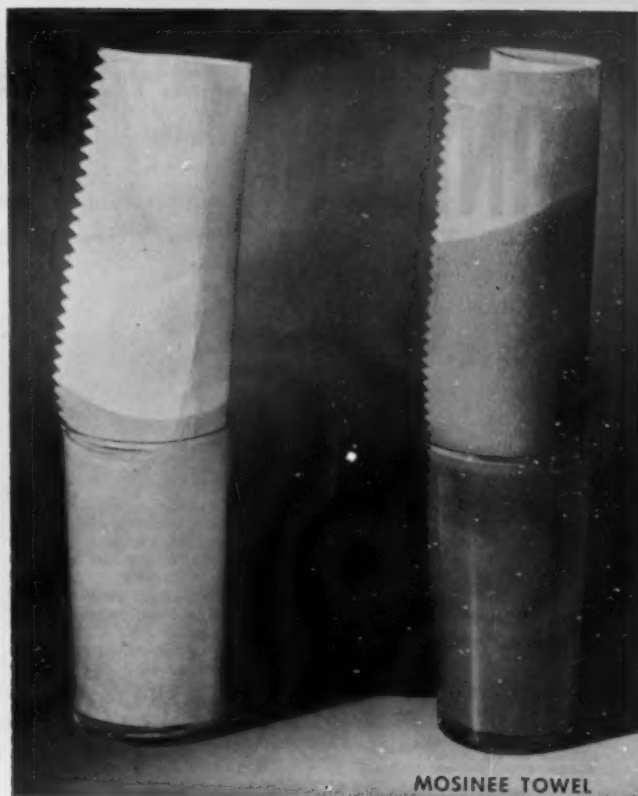
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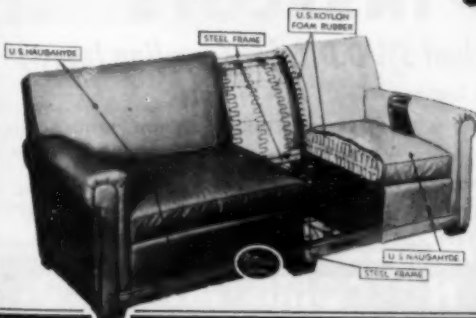
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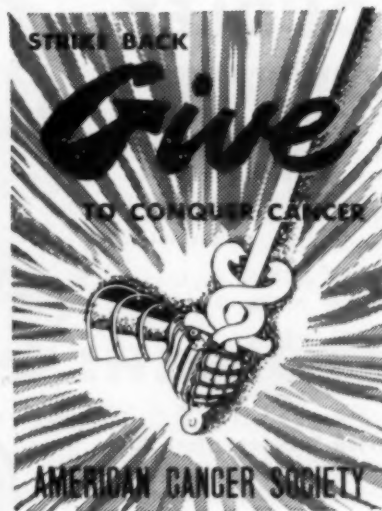
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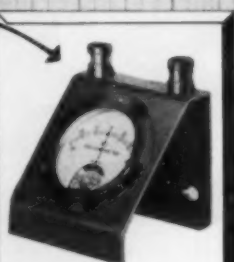
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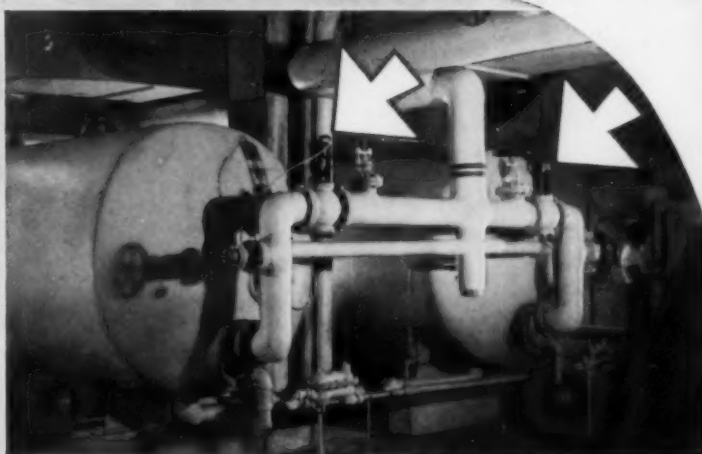
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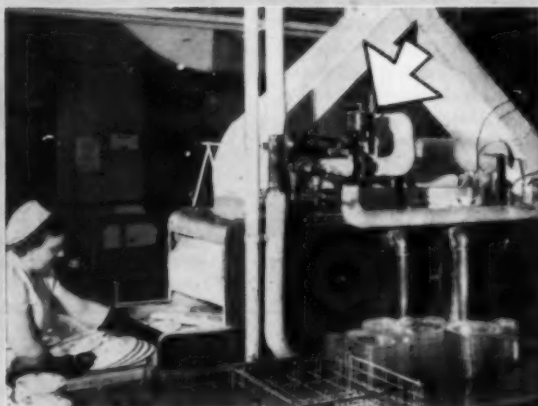
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Above: WATER HEATERS at Northwestern University



Above: STEAM TABLE—Center: DISHWASHER—Right: COFFEE URN—all at Marshall Field & Co.



COOKING KETTLE • Above: SILVERWARE WASHER  
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# WHAT'S NEW

JUNE 1950

Edited by Bessie Covert

TO HELP you get more information quickly on the new products described in this section, we have provided the postage paid card opposite page 84. Just circle the key numbers on the card which correspond with the numbers at the close of each descriptive item in which you are interested. COLLEGE and UNIVERSITY BUSINESS will send your requests to the manufacturers. If you wish other product information, just write us and we shall make every effort to supply it.

## Combination Scrubber-Vac



The new No. 418P Combination Scrubber-Vac recently introduced by Finnell System has the advantage of exceedingly quiet operation while greatly reducing the time required to clean floors thoroughly. The self-propelled unit, with an 18 inch brush ring, is designed for use in small-area buildings, with floor areas ranging from 2000 to 15,000 square feet.

The new machine handles both wet and dry work and is the result of many years of experience in building combination floor machines. The No. 418P applies the cleanser, scrubs, rinses and picks up in a single operation, thus producing clean floors in a minimum of time with little effort. It has all of the refinements and careful construction features of all Finnell equipment. Finnell System, Inc., Dept. CUB, Elkhart, Ind. (Key No. 353)

## Sanitizing Products

Wyandotte Spartec and Wyandotte Tri-Bac are two new sanitizing compounds containing quaternary ammonium germicides which have recently been added to bring the line up to five compounds of this type.

Spartec is a liquid containing 10 per cent of methyl dodecyl benzyl trimethyl ammonium chloride ordinarily used at the rate of 1 fluid ounce to 4 gallons of water to provide a clear, odorless, colorless, non-corrosive solution for cleaning glassware. It can be used at any tempera-

ture as boiling does not lower its potency, according to the manufacturer, and it is designed to be used as a general sanitizing agent following thorough cleansing.

Tri-Bac is a free-flowing white powder with triple action—detergent, germicidal and deodorizing. It is non-irritating and fast acting but is not recommended for use on heavy soil, stain or grease. Wyandotte Chemicals Corp., Dept. CUB, Wyandotte, Mich. (Key No. 354)

## Folding Chair

The No. 33 Peabody tubular steel folding chair with plywood seat has several improvements which make it stronger, more comfortable, easier to handle and give it longer life. The chair is rigidly constructed and firmly braced for maximum strength. The frame and back legs are of oval shaped steel tubing. Stretchers on the lower legs are made from  $\frac{3}{8}$  inch cold finished round steel rods shouldered at each end and riveted and welded to the frame. The replaceable rubber shoes on the feet are securely attached without bolts or screws, will not come off and do not mar the floor.

The 7/16 inch 5 ply plywood seat of the new No. 33 is rounded for additional comfort and rests on metal. The back rest has been redesigned flush with the



rail with a deep curve for greater comfort. The chair is light in weight, easily opened and closed and requires minimum storage space when not in use. Peabody Seating Co., Inc., Dept. CUB, North Manchester, Ind. (Key No. 355)

## Wet-Dry Vacuum



The operation design of the new 1950 model MCV-205A Wet-Dry Vacuum has been completely changed for increased pick-up ability. The volume of air moved through this lightweight, easily handled vacuum has been increased by over 100 per cent, making it comparable in performance to large type machines. Thus the machine will perform many cleaning jobs usually requiring a heavier industrial type vacuum. An increased number of accessory tools is also available for this versatile machine.

The redesigned exhaust provides quiet operation since a single exhaust orifice is used in the back, thus changing also the appearance of the top of the machine as compared to earlier models. The machine weighs only 36 pounds, rides on one rubber ball bearing swivel caster and 2 fixed rubber wheels, and is finished in baked enamel. It is easily moved by pulling on the hose or it can be carried by the handle on the top. Multi-Clean Products, Inc., Dept. CUB, 2277 Ford Pkwy., St. Paul 1, Minn. (Key No. 356)

## Luminous Fluorescent

The new Guthglow luminous fluorescent is available for standard 40 watt lamps and also for 4 and 8 foot Slimline Single-Pin lamps. The unit is equipped with polystyrene plastic or Albalite glass side panels which direct a portion of the light upward and outward. Low brightness Alzak aluminum baffles shield the lamp from direct view from below. The Edwin F. Guth Co., Dept. CUB, 2615 Washington Ave., St. Louis 3, Mo. (Key No. 357)



### Restaurant Range



Research and development in quantity cooking problems have resulted in the new Vulcan Restaurant Ranges which are available in 4 body styles. The ranges are designed to fill every need and are available in single and double oven units, with or without broilers and with a variety of top arrangements—open burner, hot top or fry top. Two sizes of fry tops can be supplied, one 24 inches wide and one 36 inches wide. The standard black model is trimmed with stainless steel and the de luxe model is furnished with an entirely stainless steel exterior. A stainless steel high shelf can also be furnished with the standard black model. Vulcan-Hart Mfg. Co., Dept. CUB, 2006 Northwest Pkwy., Louisville 3, Ky. (Key No. 358)

### Water Sterilizer

The new Hanovia Steritron is a completely automatic water sterilizer which maintains constant purity of water without the addition of chemicals. Taste and physical structure of the water remain unchanged, according to the manufacturer, and the unit offers efficient rapid flow sterilization at low operating cost. The Steritron can be furnished for 110, 220 and 440 volts, 50, 60 or 25 cycles. Hanovia Chemical & Mfg. Co., Dept. CUB, Newark 5, N. J. (Key No. 359)

### Room Air Conditioner

The new ARM-100 model room air conditioner recently brought out by Frigidaire has been redesigned for more efficient operation with modern, attractive styling. The exhaust damper control permits quick removal of stale air and odors. The "Selective Cooling" control located on the top of the cabinet permits cooling according to need. Two independent refrigeration systems permit fast cooling when desired by turning on both units or one unit only may be used, thus preventing over-cooling of rooms or offices, assuring economy of operation and more comfort.

A new centrifugal type conditioned air fan operating in a sound-insulated

housing distributes conditioned air into the room at the rate of 300 cubic feet per minute. The disposable type filter can be quickly removed for inspection or replacement without disassembly of the cabinet. A fresh air control located on top of the cabinet permits simple adjustment to give varying degrees of ventilation. The strong steel base assembly has a dividing panel to separate cooling and machine compartments and the cabinet is finished in two-tone gray enamel. Frigidaire Division, General Motors Corp., Dept. CUB, Dayton 1, Ohio. (Key No. 360)

### Tubular Steel Furniture

The new line of Electroweld steel school furniture is made in a full range of sizes from kindergarten to college needs. Modern in style and designed for proper posture, the tubular steel chairs and tables are light in weight and comfortable to use. There are no rough edges or exposed bolts or screws to cause damage and the line is built for dura-



bility. Wood parts are solid hardwood or banded heavy plywood and the curved leg bracing, high off the floor, allows ample leg room and simplifies floor maintenance. Electroweld school furniture is available in natural wood finish with light metal enamel on frames or in walnut finish with school brown enamel on frames. Electroweld Steel Corp., Dept. CUB, Azusa, Calif. (Key No. 361)

### Electric Automatic Screen

The new Radiant Automatic is an electrically operated screen available in 16 sizes, ranging from 6 by 8 feet to 20 by 20 feet. The new screen can be suspended from the ceiling or mounted to the wall. It has a lightweight metal case, quiet reversible AC motor, aluminum screen roller and the long wearing, washable, flameproof, mildewproof Vynaflect screen fabric. The unit operates automatically and is available at low cost. Radiant Mfg. Corp., Dept. CUB, 2627 W. Roosevelt, Chicago 8. (Key No. 362)

### Plastic Window Shades

Long wear and reduced maintenance are features of the new Plastishades recently announced. Made with a new vinylite plastic film specifically formulated for the window shade market, Plastishades have successfully withstood rigorous testing and severe laboratory examination by the United States Testing Company. They can be easily and thoroughly cleaned by using soap and a damp cloth or sponge. The material is unaffected by moisture, mildew or insects, will not tear or puncture in normal use and does not support flame. It is resistant to fading, cracking, shrinking and staining and does not ravel.

Plastishades are available in ivory, white, green and tan and are made in 36, 42 and 48 inch widths and 6 and 7 foot lengths. Other sizes can be made to order up to 48 inches wide and 9 feet in length. Charles W. Breneman Co., Dept. CUB, 2045 Reading Rd., Cincinnati 2, Ohio. (Key No. 363)

### Ice Cube Machine

The new Mills Ice Maker is a fully automatic machine, powered by a 1/3 h.p. condensing unit, which can be plugged into any convenient electrical outlet. It produces solid, clear ice in lengths from 1/2 inch to 6 inches and also has an adjustment for making cracked ice.

The Ice Maker produces approximately 5800 standard sized cubes per day and the thermostatic control regulates production of ice cubes to keep the 200 pound capacity bin full at all times. No water storage tanks are required as the fresh running water is fed directly to the ice making tubes. The unit operates economically with a minimum of current



consumption. Mills Industries, Inc., Dept. CUB, 4100 Fullerton Ave., Chicago 39. (Key No. 364)

### Metallic Screen Surface

The new processed metallic silver screen surface, known as Wonder-Lite, for the projection of polarized stereo slides, is designed to reflect and intensify light without depolarizing it, to increase the brilliance of the picture and to give a three-dimensional quality to the scene depicted. The Wonder-Lite Silver Screen Surface is supplied in the De Luxe Challenger mounting, with picture surface measuring 40 by 40 inches or 50 by 50 inches.

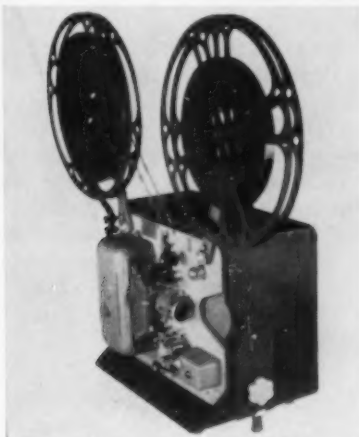
The octagon carrying case provides complete protection for the Wonder-Lite surface and the screen fabric hangs absolutely flat to give distortion-free projection. The tripod screen is easily carried, quickly set up and is also suitable for standard two-dimension projection of slides, filmstrips, opaque materials and moving pictures. **Da-Lite Screen Co., Dept. CUB, 2719 N. Pulaski Rd., Chicago 39. (Key No. 365)**

### Dumb Waiter

A new type, self-contained, complete Under-Counter Dumb Waiter unit has recently been introduced for use where scant headroom conditions indicate use of a compactly designed, easy-to-install unit. The new Sedgwick model is of all-metal construction, thus fireproof, and is designed for various capacities ranging up to 300 pounds. The unit usually employs a car approximately 24 inches wide, 20 inches deep and 26 inches high, fitted with a removable shelf. **Sedgwick Machine Works, Dept. CUB, 90 Eighth Ave., New York 11. (Key No. 366)**

### Devrylite Projector

The new 1950 model 16 mm. sound motion picture projector recently announced by the De Vry Corporation is known as the Devrylite. The unit can be



used for both 16 mm. sound and 16 mm. silent films on universal AC and DC without the need of converters. Two

input jacks are provided in the amplifier to accept the connector plug of a microphone and the connector plug of a phonograph pick-up. Thus the equipment can be used as a public address system or to add musical background or voice commentary to films.

The Devrylite is available in three models: a single case model with built-in amplifier, detachable 6 inch magnet speaker and a preview screen; a dual case model which includes an 8 inch loud-speaker in separate case, and a combination model which includes both the built-in loud-speaker and the 8 inch loud-speaker in separate case. **De Vry Corporation, Dept. CUB, 1111 Armitage Ave., Chicago 14. (Key No. 367)**

### Lincoln Edger

The Lincoln E-7 Twin-Motored Edger is a floor sander designed to permit resurfacing work right up to baseboards and in other hard to reach areas. The machine has twin motors, one operating the sanding disc and the other the dust



pick-up fan to ensure fully efficient vacuum action regardless of the load on the sander.

Adjustable casters keep the machine operating efficiently on smooth or uneven floors. The sanding discs are easily removable by hand and the dustproof dust bag has a zipper opening for easy emptying. The machine is easily operated on any type job and has a light to illuminate dark areas and corners. **Lincoln-Schlueter Floor Machinery Co., Dept. CUB, 1250 W. Van Buren St., Chicago 7. (Key No. 368)**

### Traffic-Tred Matting

Traffic-Tred is a new low priced matting designed especially for use as a runner mat. It is  $\frac{3}{8}$  inch thick and permits application in any area due to ease in cutting to accurate fit. Three slot constructions are available, closed, open or open on end of slots only and ample aeration and drainage are provided. **American Mat Corp., Dept. CUB, 1717 Adams, Toledo 2, Ohio. (Key No. 369)**

### Royal Electric Typewriter



The new Royal Electric Typewriter is designed to permit a student or secretary to switch from a manually operated to the electric typewriter without a transition period. All controls are located in the same place as on manual typewriters, thus facilitating transition and increasing convenience. The new machine is streamlined, with keyboard positions identical with those of Royal's standard and portable typewriters. Its electrically controlled touch is adjustable to the individual's typing touch and Royal's uniform key lever dip assures development of maximum typing rhythm. The "Magic" Margin permits margins to be set automatically and a control on the left side regulates the speed of the type bar for manifold work.

Finished in the soft gray tone developed by Royal to give added eye comfort to the operator through elimination of glare, the machine has complete powering which enables the operator to tabulate, shift, back space and underscore electrically. The automatic carriage return is electrically controlled by a carriage return key on each side of the keyboard. The machine is completely adaptable for instruction purposes since teaching closely follows that on manually operated typewriters. **Royal Typewriter Co., Inc., Dept. CUB, 2 Park Ave., New York 16. (Key No. 370)**

### Nylon Paint Brushes

A series of 11 new 100 per cent nylon paint brushes has been added to the present line of pure bristle paint brushes manufactured by the Fuller Brush Company. The new nylon filaments are said not to split, fray or become brittle, to be resistant to most chemicals and to be unaffected by age or weather, rodents, insects and fungi. They can be used with all types of oil and water paints, synthetics, lacquers, kalsomines and enamels and have a long life, even when used on rough surfaces. A special sanding process has softened the tips of the brushes and improved capillary attraction. The line includes 8 sizes of wall brushes, 2 stucco brushes and 1 kalsomine brush. **The Fuller Brush Co., Dept. CUB, Hartford 2, Conn. (Key No. 371)**



## Product Literature

- Full details on the new improved **American DeLuxe Floor Maintenance Machine** manufactured by the American Floor Surfacing Machine Co., 546 S. St. Clair St., Toledo 3, Ohio, are given in a new 4 page folder recently received. The new features of the machine, which is designed for dry or wet cleaning and maintenance operations on a variety of floors, are discussed. (Key No. 372)

- The new type of suspended acoustical ceiling construction, the **Acousti-Line System**, is discussed in a new 8 page brochure recently published by The Celotex Corp., 120 S. La Salle St., Chicago 3. Drawings show the various parts of the system and how they quickly clip together to form a perfectly level ceiling from which any 12 by 24 inch acoustical tile can be removed instantly for access into the back-ceiling space. Photographs of actual installations showing how the ceiling is adapted to various types of modern lighting fixtures are also reproduced and a specification form is included. (Key No. 373)

- A practical and easily understood one lesson course on asphalt tile installation is offered in a pamphlet, **"It's So Easy to Install Your Own Beautiful KenTile Floor,"** recently published by David E. Kennedy, Inc., 58 Second Ave., Brooklyn 15, N. Y. Each step in the process is explained with information on materials needed, how to measure a room, how to plan the border, how to spread the adhesive, laying of the tile and how to cut the border. (Key No. 374)

- **"LOF Glass for Construction"** is discussed in a 28 page booklet issued by Libbey-Owens-Ford Glass Co., Toledo 3, Ohio. All types of construction glass manufactured by the company are described with technical data on qualities, uses, specifications, processing, durability and other pertinent details. Illustrations of the various products as well as of installations add to the interest of this reference booklet. (Key No. 375)

- The 1950 Catalog of **"Fenestra Steel and Aluminum Building Panels"** is now available from Detroit Steel Products Co., 2250 East Grand Blvd., Detroit 11, Mich. This 38 page catalog features a type "C" wall panel designed for use as exterior and partition walls; a type "D" deck and floor panel generally used for floors and long span roofs, and a type "AD" deck and floor panel providing construction with a flat upper and bottom surface. Also described and illustrated are acoustically-treated panels and Holorib steel deck. Detail drawings, fire resistance ratings, methods of panel electrification, panel selection tables and specifications are also included. (Key No. 376)

- **"The Case for the 'Ten-Twenty'"** issued by the American Seating Co., Grand Rapids 2, Mich., is an attractively prepared booklet containing full information on the company's newest desk, the "Ten-Twenty," which provides level, 10 and 20 degree top positions in addition to automatic forward and backward seat adjustment and other visual and postural features. The booklet also carries a summary of the studies of the Texas Inter-Professional Commission on Child Development and a list of reference books related to lighting, seeing, seating, posture and child development. (Key No. 377)

- **"A Dictionary of Electronic Terms"** has been prepared under the direction of the technical staff of Allied Radio Corp., 833 W. Jackson Blvd., Chicago 7, and edited by Harry L. Van Velzer, Ph.D., Associate Professor of Electrical Engineering at the University of Illinois. Including more than 250 terms used in television, radio and electronics, the dictionary contains an appendix with information on historic radio dates, useful books on radio and television, RMA resistor color code, schematic symbols and how to become a radio amateur. The book is offered at 25 cents per copy. (Key No. 378)

- A new monthly publication is being issued by Magnecord, Inc., 360 N. Michigan Ave., Chicago 1, manufacturer of magnetic tape recording equipment, covering news and developments in the field of magnetic tape recording. Known as **"Magnecord INK,"** the publication will be available without cost to those interested in tape recording. (Key No. 379)

- Users of aluminum paint will find much helpful information in the comprehensive 32 page brochure recently published by the Aluminum Company of America, 801 Gulf Bldg., Pittsburgh 19, Pa. Entitled **"Painting With Aluminum,"** the brochure is profusely illustrated and several pages are devoted to questions and answers and an aluminum paint coverage table. While the Aluminum Company of America does not make or sell aluminum paint, the booklet was published to explain how aluminum paints can be used to best advantage. (Key No. 380)

- Of interest in relation to the recent elections in Great Britain is the new booklet, **"Parliamentary Electoral Procedure in Britain,"** designed to supplement the film on "General Election" which was issued some years ago by the British Information Services, 30 Rockefeller Plaza, New York 20. The film is an on-the-spot reporting job of the election and the new booklet discusses details of electoral procedure in an interesting manner. (Key No. 381)

- The new line of library furniture and equipment available from the Library Bureau of Remington Rand Inc., 315 Fourth Ave., New York 10, is described and illustrated in detail in **Catalog LB 403 1-50** recently published. Containing illustrations and data on modern wood furniture of the "Trend" design as well as custom-made charging desks, wood and steel shelving, exhibit cases, magazine racks, fire-resistive cabinets and other library products and services, the 52 page booklet also shows in pictures the manufacturing operations that go into the creation of "Trend" furniture. Pictures of 14 installations of Library Bureau equipment in leading libraries, including the new Harvey L. Firestone Memorial Library at Princeton University and the Southern Methodist University Library, are shown. The book is fully indexed and contains a list of Library Bureau installations throughout the country. (Key No. 382)

- Plans for a **combination paper towel dispenser and waste receptacle recessed into the wall** to save space in public and personnel washrooms have been developed by Scott Paper Company, Chester, Pa., and are available from the Washroom Advisory Service of that company. The plans include a towel cabinet recessed flush with the wall with the towels dispensed at shoulder level and a waste receptacle, also recessed, at waist level. The unit is 14 inches wide, 6 feet 2 inches high and 7½ inches deep. (Key No. 383)

- The story of **Infra Insulation**, for installation in ceilings, walls and floors, to resist heat and vapor flow, is told in the third revised edition of **"Simplified Physics of Thermal Insulation,"** a booklet issued by Infra Insulation, Inc., 10 Murray St., New York 7. (Key No. 384)

- Especially prepared for college classes is a series of 10 silent **filmstrips on American Government** which are correlated with two textbooks: "The American System of Government" and "The American Federal Government." The filmstrips present information on the Constitution, the Federal system, political parties and elections, Congress, office and powers of the President, Federal court system, public administration and civil service, Federal finance and foreign relations. The series has been developed by the Text Film Dept., McGraw-Hill Book Co., 330 W. 42nd St., New York 18. (Key No. 385)

## Suppliers' News

**Lily-Tulip Cup Corp.**, 122 East 42nd St., New York 17, manufacturer of paper cups and dishes, announces the opening of its newly constructed plant at Toronto, Canada.



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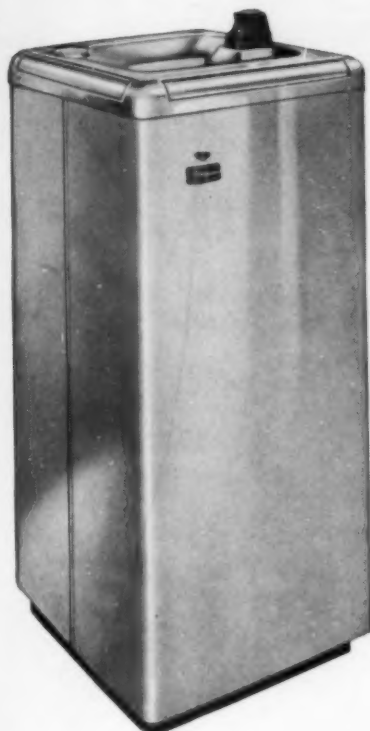
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**Simple Cold-Control** is easy to use. Just set the dial and water is always delivered at the temperature you select.

**Thrifty Meter-Miser** is the simplest refrigerating mechanism ever built—your assurance of years of low-cost, trouble-free operation. It's backed by a special 5-Year Warranty.

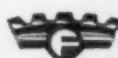
## There's a Frigidaire Water Cooler to meet every need

The compact new high-capacity cooler, shown above, delivers up to 20 gallons of cool, refreshing water per hour. Like other water coolers in the complete Frigidaire line, it's as attractive as it is efficient—operates quietly, economically, dependably. Other self-contained models include four pressure-type coolers, bottled water coolers for locations where water under pressure is not available, heavy-duty coolers that are ideal for many uses in school plants.

Also tank types with remote refrigeration compressors for special water cooling requirements. It's easy to see that whatever your water cooling needs, you can meet them exactly with Frigidaire equipment.

For full information on Frigidaire Water Coolers, call your Frigidaire Dealer. Look for his name in your Classified Phone Book, under "Water Coolers" or "Refrigeration Equipment." Or write Frigidaire Division of General Motors, Dayton 1, O. In Canada, Leaside 12, Ont.

## FRIGIDAIRE Water Coolers



Over 400 Frigidaire commercial refrigeration and air conditioning products—most complete line in the industry.



"The 5-Year Warranty on your Meter-Miser refrigerating unit is one big reason we chose Frigidaire," says Jay R. Broussard, Director, Art Commission, Baton Rouge, La. "Other reasons are the fine design and compactness of Frigidaire Water Coolers."

## What's your problem?

If yours is a problem of refrigeration or air conditioning, you'll find the right answer in the big Frigidaire line of more than 400 products—the most complete in the industry.

### Air Conditioning

Room size air conditioners. Store type conditioners for dining rooms, lecture halls, etc. Central systems to meet almost any requirement.



### Electric Dehumidifier

Prevents moisture damage, retards rust, mold and mildew. For libraries, storage rooms, workshops, and basement areas.



### Reach-in Refrigerators

For lunch rooms, cafeterias, dining halls and for biological storage. Self-contained or remote types up to 62 cu. ft. Forced air or ice-making cooling units.



### Ice Cream Cabinets

For lunch rooms, cafeterias and dining halls. For low temperature storage in medical departments. Remote and self-contained models. 4-hole to 10-hole sizes.



### Beverage Coolers

For lunch rooms, cafeterias and dining halls. Both wet and dry models in several sizes.



### Food Freezers

For lunch rooms, cafeterias and dining halls. 8.8 cu. ft. to 18 cu. ft. capacities.



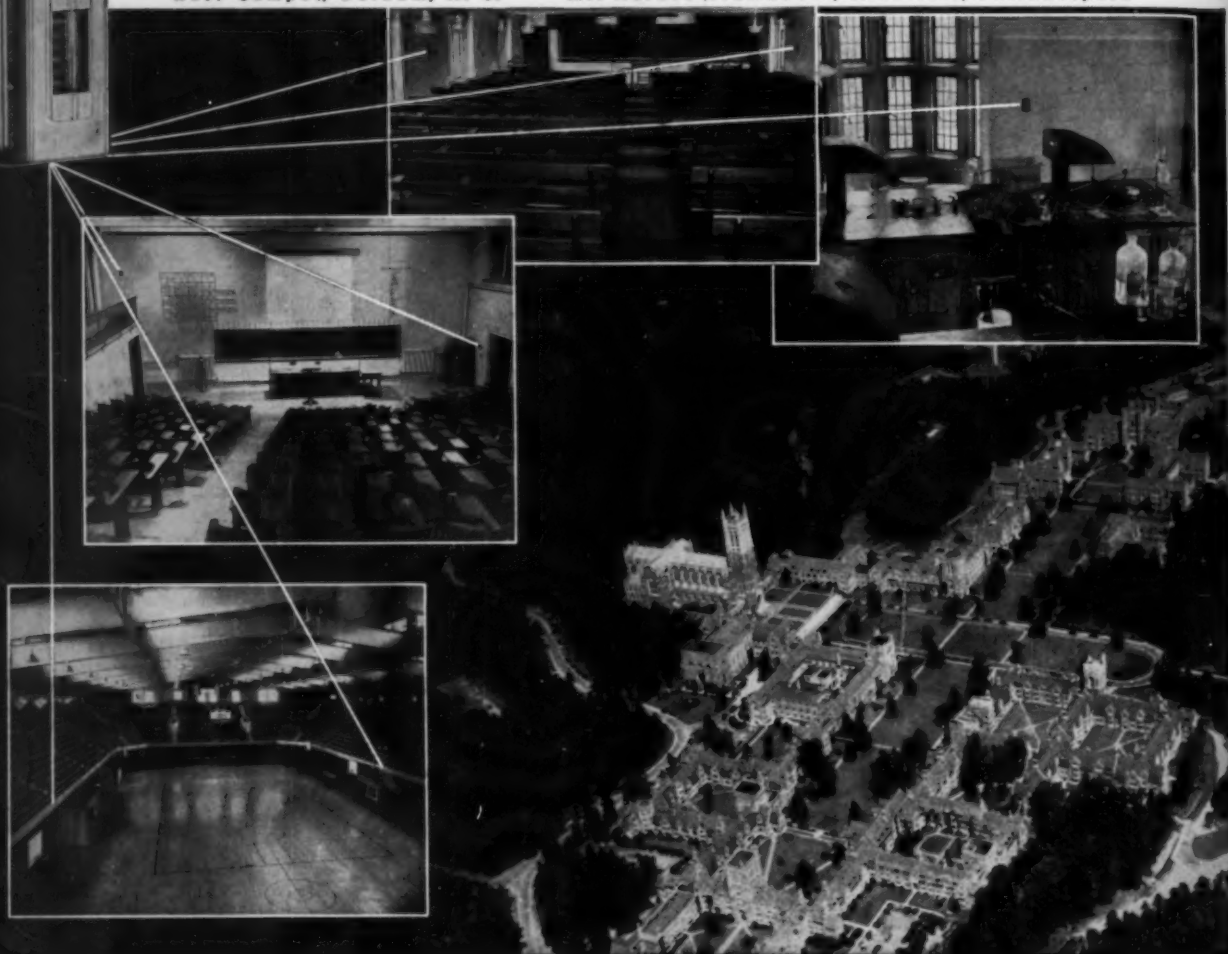
### Compressors

Sealed rotary and reciprocating types for wide range of needs. Sizes up to 25 H.P.





**D u k e U n i v e r s i t y**  
 West Campus, Durham, N. C. Mr. Horace Trumbauer, Architect, Philadelphia



## 2,000 JOHNSON *Room-by-Room* THERMOSTATS

To many people, control systems are modern miracles. Most of us seldom give a second thought to the small Johnson thermostat on the wall of each room—the instrument that works as part of a whole system to control large or small heating plants. As a result, every room is as warm or as cool as needed, and fuel is not wasted. These comforts are made possible by automatic control without effort on the part of man . . . a modern-day wonder.

Think what automatic temperature control systems mean to such institutions as Duke University! Beautiful, large buildings are made comfortable and useful with correct temperatures, hour by hour . . . fuel is being saved by the minute. Architects planned Duke to be one of the world's most modernly equipped universities for many years to come.

Johnson engineers have spent years solving temper-

ature control problems in many climates. It is natural that Johnson was selected to cooperate in building the finest control systems that engineering science could devise. Temperatures in Duke University buildings are controlled by Johnson. In passing from the large chapel into the classrooms, greenhouses, gymnasium, library and into a host of other buildings, it is understandable that temperatures of many varied degrees are required . . . using some 2,000 thermostats.

Important in large institutions, Johnson Control Systems offer the same advantages of comfort, healthfulness and fuel saving for smaller buildings. Whatever the control problem, Johnson specialists cooperate to assure precision results. Consult a near-by Johnson engineer—no obligation. JOHNSON SERVICE COMPANY, MILWAUKEE 2, WISCONSIN. Direct Branch Offices in Principal Cities.

**JOHNSON** *Automatic Temperature and Air Conditioning* **CONTROL**  
 DESIGN • MANUFACTURE • INSTALLATION • SERVICE

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